

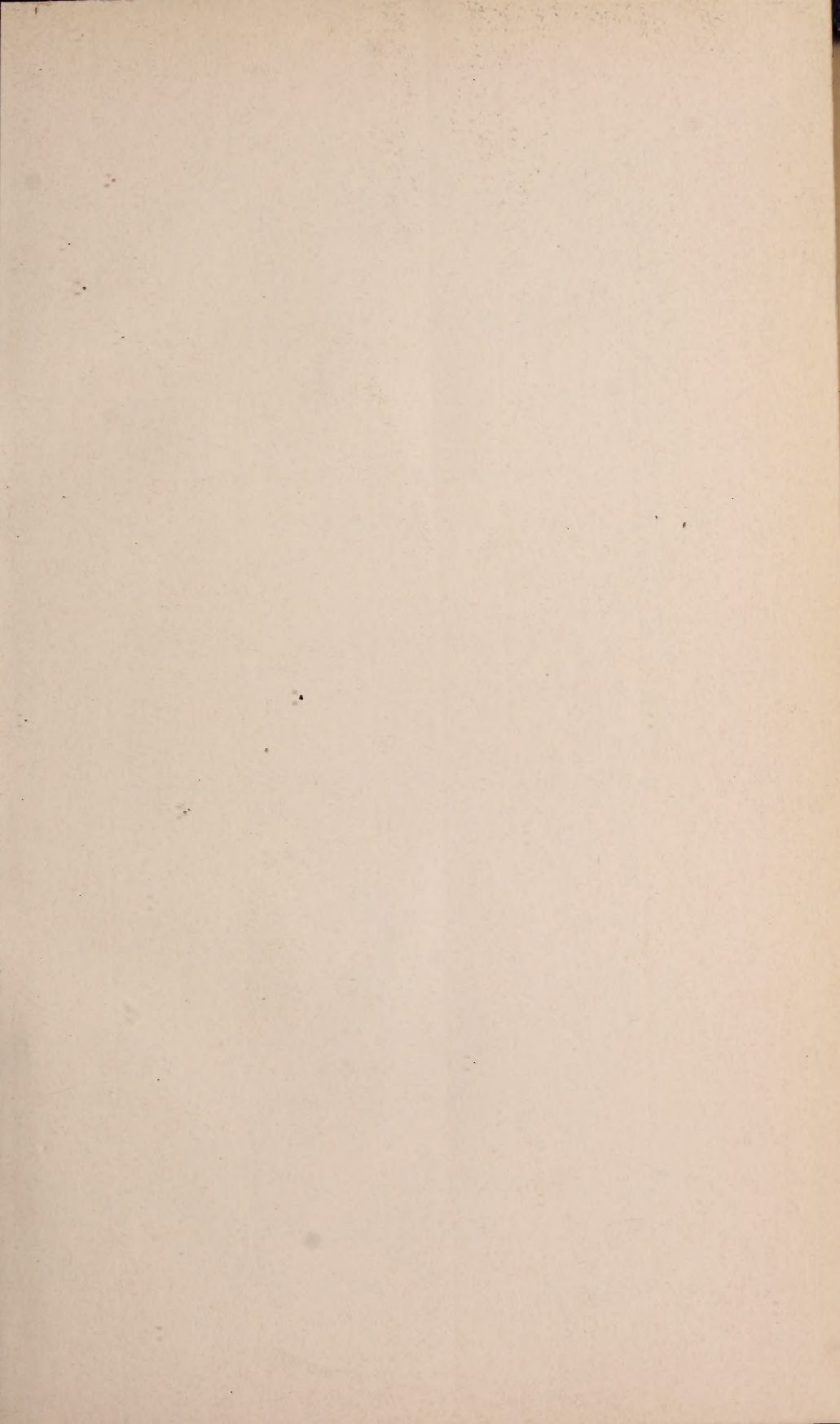
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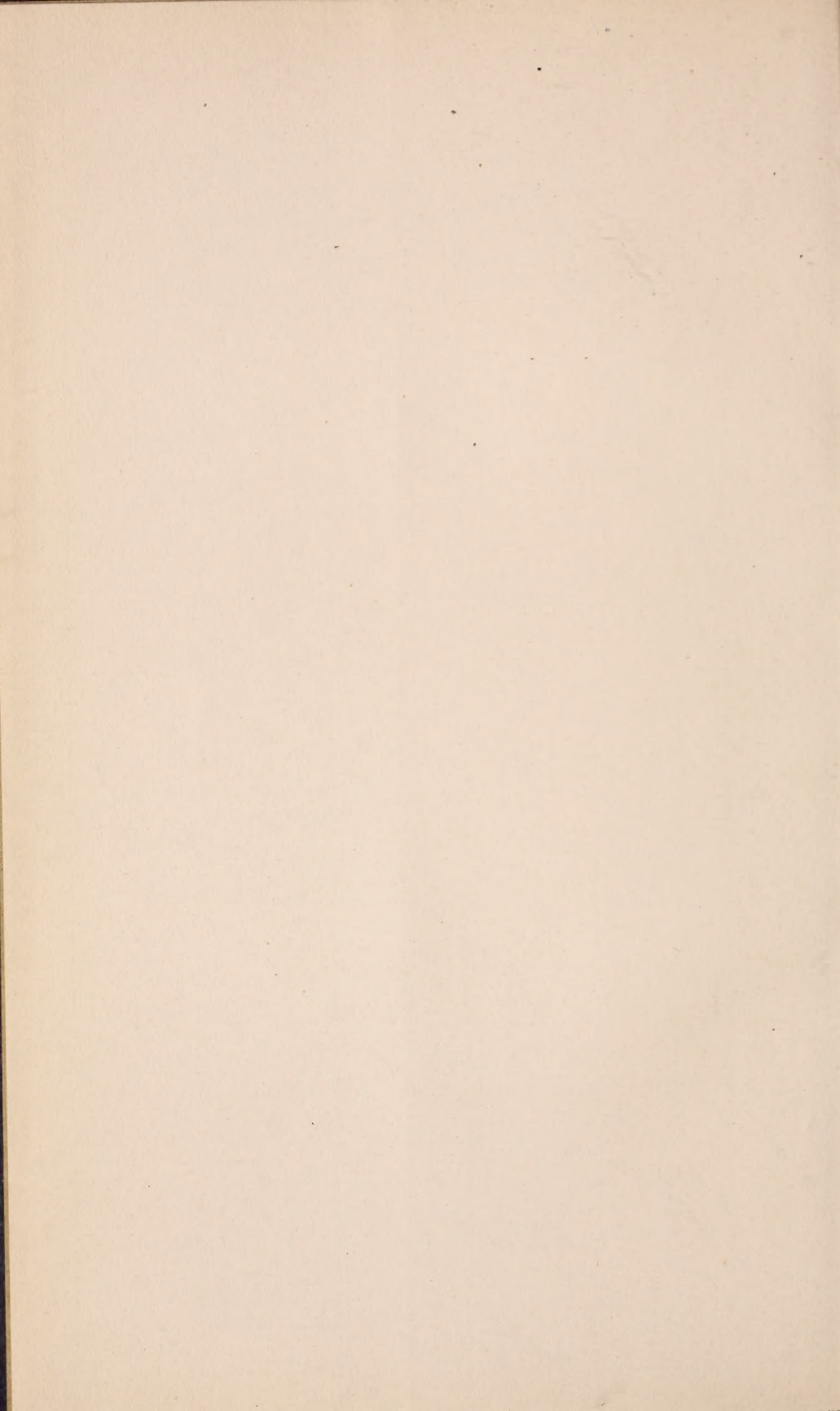


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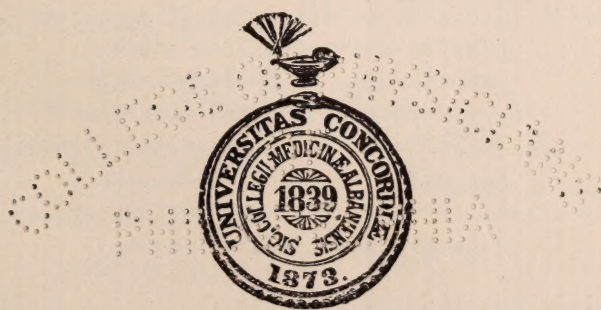
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ALBANY MEDICAL ANNALS

Journal of the Alumni Association of the
Albany Medical College

VOLUME XXIX

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Original Communications

EXPERIMENTAL LIVER NECROSIS; I. THE HEXON BASES.¹

By HOLMES C. JACKSON, Ph.D.,
Adjunct Professor of Physiological Chemistry,

AND

RICHARD M. PEARCE, M.D.,
Professor of Pathology and Bacteriology, Albany Medical College.

This communication is the first of a series of five, which presents the results of a somewhat comprehensive investigation of the chemical changes associated with experimental liver necrosis and which includes, in addition to that here presented, studies of the nitrogenous metabolism, nuclein metabolism, the activity of the intracellular hepatic enzymes and the changes in the fats and lipoids of the liver.

The advantage of undertaking such a comprehensive study was suggested by the investigations² which one of us had previously made of the necrosis caused in the liver of the dog by the intravenous or intraperitoneal injection of hemagglutinative and hemolytic immune sera. The lesions so produced are frequently focal and resemble in a general way those of eclampsia while the diffuse lesions, with the associated repair, are more or less similar to certain stages of acute yellow atrophy. It seemed plausible therefore that a study of the chemistry of such lesions, readily produced experimentally, might throw light not only on certain functions of the liver but might offer new knowledge of value in explaining some of the problems of eclampsia, acute yellow atrophy and similar lesions in man.

The study of the hexon bases was undertaken in the hope of determining the character of the processes underlying the production of *intra vitam* autolysis. We have therefore attempted to determine the relative enzymotic power of the normal and the necrotic liver in regard to the synthesis or

¹ Conducted under grants from the Rockefeller Institute for Medical Research. Read by title before the Society of Experimental Biology and Medicine, New York, March 20, 1907. Published also in *Journal of Experimental Medicine*, 1907, ix, 520.

² Pearce, R. M., The Experimental Production of Liver Necroses by the Intravenous Injection of Hæmagglutinins, *Jour. of Med. Research*, 1904, xii, 329; 1906, xiv, 541. Experimental Cirrhosis of the Liver, *Jour. of Exper. Med.*, 1906, viii, 64.

decomposition of the hexon bases. The importance of these bodies, as products of autolysis, has been emphasized by Wakeman³ in his study of the livers of dogs poisoned with phosphorus or repeatedly anesthetized with chloroform. In addition to the study of fresh tissues, we have investigated also the changes occurring in hexon nitrogen during antiseptic autolysis of liver substance.

The experimental lesions under consideration may be described, without going into detail, as hyaline necroses with little or no leucocytic reaction, the position and extent of which vary according to the amount of serum administered and the resistance of the animal. Small doses causes focal lesions more or less isolated and irregularly distributed; large doses produce a diffuse necrosis which spares only the tissue about the larger portal spaces. The lesions are found chiefly near the surface of the liver, but may occur in the deeper portions. In animals dying within a few hours after injection and before the appearance of necrosis an intense congestion of the entire portal system exists with, in the liver, innumerable thrombi composed of fused red cells.

In addition to such material from the dog, the livers of horses presenting degenerative and necrotic lesions, occurring in the course of immunization with various bacterial products, have also been utilized. These lesions, which have been described fully elsewhere by Pease and Pearce⁴ and more recently by Lewis,⁵ consist of widespread necrosis associated not infrequently with an extensive deposition of amyloid and usually accompanied by hemorrhages.

A series of fifteen livers, eleven from the dog and four from the horse, has been examined. Of the former, five were normal, four showed focal necroses and two diffuse necrosis; of the latter two were normal and two were examples of necrosis associated with extensive amyloid transformation.

Methods.—As a necrotic lesion in the dog's liver reaches its greatest extent in twenty-four to forty-eight hours after injec-

³ Wakeman, A. J., On the Hexon Bases of Liver Tissue under Normal and Certain Pathological Conditions, *Jour. of Exper. Med.*, 1905, vii, 292.

⁴ Pease, H. D., and Pearce, R. M., Liver Necrosis and Venous Thrombosis in Horses Actively Immunized with Diphtheria and Tetanus Toxins and with Streptococci and their Products, *Journ. of Infect. Diseases*, 1906, iii, 619.

⁵ Lewis, P. A., Hemorrhagic Hepatitis in Antitoxin Horses, *Jour. of Med. Research*, 1906, xv, 449.

tion, all livers used in the study of the hexon bases were taken from animals killed at the end of the latter period. In the case of the horses the livers were removed within one hour after death.

After cutting away the larger vessels and the coarser tissue about the hilum the organ was subdivided and passed through the hashing machine. Small portions were weighed and set aside for drying and upon these total nitrogen estimations were made later. At the same time two portions of 100 grams each of moist liver were placed in flasks. To one, 600 cubic centimeters of water and 300 grams of sulphuric acid were added and hydrolysis carried on for fourteen hours in a paraffin bath. The other sample was suspended in 600 cubic centimeters of water and with it were thoroughly mixed about fifty cubic centimeters of toluol. This flask plugged with cotton was allowed to stand at room temperature for periods of one or two months. At the end of this time it was examined bacteriologically, and if found free of bacteria, 300 grams of sulphuric acid were added and the material hydrolyzed in the same manner as the control. Subsequent treatment was carried out according to the method outlined by Wakeman except that the process was continued only to the point of making nitrogen determinations of fractions "A" (arginin and histidin) and "B" (lysin) after removal of the barium and silver by means of sulphuric acid and hydrogen sulphide. For our purpose no advantage was to be gained by separating arginin and histidin.

Dry Solid Content.—An examination of the figures in the table indicates that the dry solid content of the dog livers with scattered focal necroses did not vary from the normal average of 24 per cent. In the case of the diffuse lesions, where the autolysis of the protoplasm was obviously more marked, the dry solids were reduced to an average of 20.8 per cent. The figures referring to normal livers agree somewhat closely with those of Wakeman, who, however, noticed a slight decrease in the percentage of dry substance in the livers of dogs poisoned by phosphorus. This is somewhat surprising since he describes these livers as markedly fatty. If the protoplasm of which seventy-five per cent. is water is replaced by fat, which contains none, the dry solids should increase instead of decrease. If Wakeman's figures are correct they show a

TABLE—*Hicron Bases*.

NATURE OF EXPERIMENT.		DETERMINATION ON FRESH TISSUE.						ON AUTOLYSED TISSUE.			
Dog.	Condition of Liver	PER CENT.			*PER CENT. NITROGEN.			Per Cent. of N ₂ ppt. by Phosphotung. Acid.		*PER CENT NITROGEN AS	
		Dry Substance.	Nitrogen in Dry Substance.	N ₂ ppt. by Phosphotung. Acid.	Arginin Histidin.	Lysin.	Purin Bases.			Arginin and Histidin.	Lysin. Purin Bases.
3	Normal.....	24.8	12.1	13.2	4.3	3.6	5.3	Not bacteria-free	19.8	8.4	9.8
4	Normal.....	18.4	10.9	15.0	6.0	4.9	4.1				
13	Normal.....	26.8	11.8	Used only for autolysis			4.1	18.3	18.3	8.0	7.3
14	Normal.....	24.5	9.2	Used only for autolysis			5.1	17.6	17.6	7.5	7.6
17	Normal.....	25.0	11.2	19.6	4.3	7.4	5.1	23.4	23.4	8.0	7.9
Av.		23.9	11.3	15.9	6.0	5.3	4.8	10.0	10.0	8.0	8.2
5	Few focal necroses.....	24.4	21.4	12.2	5.6	4.2	2.4	9.0	9.0	4.1	2.7
7	Few focal necroses.....	16.6	19.1	14.5	7.3	5.1	2.1	10.2	10.2	4.9	3.5
9	Numerous focal necroses.....	26.9	22.8	10.2	4.8	3.2	2.1	6.7	6.7	2.3	2.6
10	Numerous focal necroses.....	25.6	23.7	8.5	3.6	2.5	2.4	6.8	6.8	2.7	1.0
Av.		23.4	21.8	11.4	5.3	3.8	2.3	8.2	8.2	3.5	2.7
29	Extensive diffuse necrosis...	21.9	12.7	30.0	15.6	11.6	2.8	23.9	23.9	11.5	10.2
60	Extensive diffuse necrosis...	10.8	13.2	25.6	12.7	11.3	1.6	20.7	20.7	10.1	9.5
Av.		20.8	12.05	27.8	14.2	11.5	2.2	22.3	22.3	10.8	9.9
					50.8	41.4	7.4			48.5	44.3

TABLE—Hexon Bases (Continued).

NATURE OF EXPERIMENT.		DETERMINATION ON FRESH TISSUE.					
Horse.	Condition of Liver.	PER CENT.			*PER CENT. NITROGEN AS		
		Dry Substance.	Nitrogen in Dry Substance.	N ₂ ppt. by Phosphotungstic Acid.	Arginin and Histidin	Lysin.	Purin Bases
60	Normal.....	23.3	12.0	8.1	3.0	4.6	0.5
65	Normal.....	21.8	11.2	8.5	3.9	56.7 3.1	6.3 1.0
Av.		22.6	11.6	8.3	3.5	45.9 46.6	17.6 12.0
42	Necrosis and amyloid.....	20.0	21.7	13.5	2.9	8.2	2.4
69	Necrosis and amyloid.....	21.4	13.7	13.3	21.4 1.2	60.7 10.2	17.9 1.9
Av.		20.7	17.7	13.4	9.0 2.1	76.7 68.7	14.3 16.1

*Figures in upper left hand corner are calculated on the total nitrogen; those in the lower right hand corner on the total hexon nitrogen.

marked increase in the water content of the organs during phosphorus poisoning. That such an increase may occur did not appear in our investigation⁶ of fatty changes in the liver.

Total Nitrogen Content.—Several interesting facts developed from the analysis of the nitrogen of the dry solids. The average of the five determinations for normal tissue was 11.3 per cent. in agreement with Wakeman; while that of the livers with lesions of a scattered focal character was 21.8 per cent.

This, of course, indicates a deposition or heaping-up of nitrogenous material in the hepatic cell. That such a process may take place even under physiological conditions is evident from the results of experiments carried out by Seitz.⁷ This investigator found that by feeding hens and geese excessive amounts of meat a true deposition of nitrogenous substances occurred in the cells of the liver. This increase amounted in some instances to 300 per cent.

In our experiments the quantity of nitrogen in the hepatic cell was almost doubled in the organs with scattered necrotic lesions. This condition allows of an explanation similar to that offered for the infiltration of fat in tissues during phosphorus or phloridzin poisoning. In such lesions the cells have lost in part their power to oxidize properly the sugar or other materials placed at their disposal by the circulating blood and hence the starving cell, in its endeavor to spare its own protoplasm from destruction, stores up fat for purposes of oxidization.

That the cells at the margin of the necroses under consideration do accumulate fat we have observed in our study of the histological changes occurring in these livers.⁶ It seems distinctly possible that during the initial stage of congestion and thrombosis and in the early stages of necrosis, the imperfectly nourished and slightly injured cells may heap up nitrogenous material also. When, however, the lesion is more extensive, the storing up of nitrogen is not so evident as shown by the fact that the nitrogen of the dry solids remains more nearly normal. This is to be explained by assuming that the nitrogen stored up in the persisting liver cells is

⁶ See fifth paper of this series, "The Fats and Lipoids."

⁷ Seitz, W., Die Leber als Vorrathskammer für Eiweissstoffe, *Arch. f. ges. Physiol.*, 1906, cxi, 309.

sufficient to more than balance the loss by autolysis in the necrotic areas.

Wakeman's figures for the nitrogen content of livers after phosphorus poisoning show a diminution equivalent to 35.6 per cent. and a corresponding decrease in the hexon base nitrogen. This indicates, according to his view, that that part of the proteid molecule involving the hexon bases has not undergone a relatively greater decomposition than the other nitrogenous substances. It would seem to us that the low nitrogen content of the phosphorus livers is wholly, or in greatest part, due to the large amount of fat present.

The Hexon Bases.—Wakeman's results indicate that in the dog the average nitrogen content of the bases in the normal liver tissue is 17.04 per cent. of the total nitrogen, while in the liver of dogs poisoned with phosphorus it is only 10.72, a falling off of 37.1 per cent. The livers of dogs receiving chloroform showed 13.6 per cent., a decrease of 20 per cent. In these figures Wakeman sees evidence of increased autolysis in hepatic cells affected by phosphorus or chloroform. Although he mentions definite necrosis in but one of his livers, the cell destruction in phosphorus poisoning, gradual as it is, is such that our results ought to fall, as they do, somewhat into line with his.

Thus as an average of three normal livers we find the figures concerning the total content of hexon bases, based on nitrogen content attributable to them, to be 15.9 per cent. of the total nitrogen. In the case of the scattered focal necrosis, the percentage is slightly decreased to 11.4 as an average of four determinations, but the absolute amount is increased. That is gram for gram of dry substance there occurs an increase in the absolute amount of hexon bases which however appears as a decrease in percentage on account of the high nitrogen content of the dry substance.

This absolute increase in hexon content of dry substance is greater and more clearly accentuated in the livers of those dogs in which the necrosis is more diffuse. Here the nitrogen of the dry substance is almost the same as that of the normal, 12.95 per cent. as average of two determinations; but the hexon base nitrogen content rises to 27.8 per cent. of the nitrogen of the dry substance.

This observation is extremely interesting in that it points most

strongly to the preponderance of the autolytic process over the synthetic in the more widespread forms of necrosis with early repair. The figures show a definite increase in the hexon base content of the necrotic cell, although the accumulation of nitrogen in this lesion, 12.95 per cent., could not occur to such a marked extent as it did in the local lesion, 21.8 per cent., because of the lessened number of persisting living cells capable of storing up nitrogen. A rearrangement of nitrogen, the result of autolysis in the larger areas of necrosis, therefore took place as shown by the hexon nitrogen content of 27.8 per cent., as compared with that of 11.44 per cent. in the focal lesion and 15.9 per cent. in the normal. This great increase of hexon bases may be due in part also to disturbances of the circulation accompanying the necrosis which prevent the diffusion and removal of the bases from the liver. In this connection attention may be called to Jacoby's⁸ observations that leucin and tyrosin are not found in the liver of phosphorus poisoning when no disturbance of the hepatic circulation exists.

Relation of Precipitate "A" (Arginin and Histidin) and Precipitate "B" (Lysin) to the Total Hexons.—Wakeman, from a consideration of his results on these fractions, concludes that in the autolysis which occurs in the cell in phosphorus poisoning the arginin suffers a greater destruction than do the other bases, probably through the action of arginase, which splits arginin into ornithin and urea.⁹ His tables show that of the 17.0 per cent. of the nitrogen of the total bases in the normal tissues, 11.8 per cent. is to be attributed to arginin and histidin and 5.2 to lysin. In phosphorus poisoning, on the other hand, the nitrogen of the bases amounts to 10.7 per cent., of which only 6.8 per cent. belongs to the arginin and histidin and 3.8 per cent. to the lysin. This indicates a decrease during autolysis of 42.3 per cent. for the arginin and histidin, but only 26.8 per cent. for the lysin.

If, however, one considers these figures from the standpoint of the relationship which the precipitates "A" and "B" bear to the total hexon bases of the normal and phosphorus dogs, an entirely different view is obtained. In the normal tissue

⁸ Jacoby, M., Ueber die Beziehungen der Leber und Blutveränderungen bei Phosphorvergiftung zur Autolyse, *Zeit. f. physiol. Chem.*, 1900, xxx, 174.

⁹ Kossel, A., and Dakin, H. D., Ueber die Arginase, *Zeit. f. physiol. Chem.*, 1904, xli, 321.

precipitate "A" (arginin and histidin) forms 69.6 per cent. and precipitate "B" (lysin) 30.4 per cent. of the total bases; whereas in the phosphorus livers the former is 63.9 per cent. and the latter 36.1 per cent. Hence the decrease in the fraction "A" is only 5.7 per cent. and this is offset by the corresponding increase in fraction "B." This diminution in the arginin and histidin content of the hexon base fraction of the livers of phosphorus-poisoned animals compared with the normal is so slight that it hardly seems warrantable to attribute it to the action of arginase.

Our figures for the total hexon bases (15.9 per cent.) in the normal agree well with those found by Wakeman while those for the focal necroses have suffered a percentage decrease which is somewhat comparable to that noticed by him in phosphorus poisoning. Wakeman's percentage decrease, however, was also an absolute one while ours in reality was an absolute increase, as has been explained above. The proportion which precipitates "A" and "B" bear to the total is markedly different, however, from that which he notes. Our average in the normal tissues for the arginin and histidin fraction is 36.2 per cent. as against 69.4; the lysin fraction 32.5 per cent. more nearly agrees with his 30.3 per cent. If we exclude the purin bases our results become more comparable and agree better in percentage.

We have also found a much greater percentage of the total nitrogen due to purin bases. Wakeman's figures show an average of 0.0273 per cent. for normal and pathological, while ours showed 4.8 per cent. for the normal tissue against 2.2 per cent. for the focal necrotic lesions and the same for the diffuse necrosis.

As to variations which the individual bases undergo in their relation to the total bases, our results point to an increase from the normal of 36.2 per cent. to 46.4 during the focal necrosis and to 50.8 per cent. during diffuse necrosis for arginin and histidin. The lysin fraction shows no change in the focal necroses as compared with the normal, but in the diffuse necrosis it increased 24.3 per cent over the normal in agreement with Wakeman.

In the autolysis *in vitro*, which is discussed in the next paragraph, the normal fraction "A" represented 42.0 per cent. of the whole bases and fraction "B" 42.8 per cent.—differ-

ences from the normal which are well within the limit of error. Hence the absolute increase from 6.0 and 5.3 in the unautolyzed to 8.0 and 8.2 per cent. of the total nitrogen in the tissue after autolysis was in exact relation to the increase in total hexon nitrogen. The same is true for the autolyzed tissue with necrosis of all types.

This would emphasize more markedly the point made above that small evidence can be adduced to show that an enzyme, arginase, is acting on the arginin, decreasing its amount during autolysis. Such action is not shown by our figures and moreover in our investigation of intracellular hepatic enzymes¹⁰ we could not obtain an active arginase from the necrotic dog's liver, though it was found in the normal.

Hexons Resulting from Autolysis in Vitro.—It seemed worth while in view of the investigation, carried on synchronously, of intracellular hepatic enzymes¹⁰ to determine the relation of the hexon bases to autolysis of the liver *in vitro*. For such observations the figures given above for autolysis during life serve as controls. Autolysis was allowed to proceed for varying lengths of time in the endeavor to determine whether the different organs showed varied degrees of autolysis. The periods selected, one and two months, were inadequate to bring out this point, since the autolysis was completed or the reaction reached its equilibrium before one month. This was unfortunate as we thereby disregarded the important element, that of time, in this connection. The time element, however, is fully considered elsewhere¹⁰ from another point of view.

A glance at the figures in the table shows that after autolysis of the normal organs the percentage of total nitrogen as hexon nitrogen was 19.0 per cent. as an average of four determinations. This increase of 18.8 per cent. over the normal hexon content is not marked, and if one examines the figures referring to the two dogs (4 and 17) upon which alone we have absolute controls, it will be seen that this increase is variable.

We are not inclined to attempt to explain this result in detail in this place, since the data which we will present in our study of the enzymes bear more decisively upon this matter. Suffice it to say that these figures, taken in connection with

¹⁰ See second paper of this series, "Enzymes."

those of the diffusely necrotic organs where an increase also was evident, indicate that in the autolysis a transformation or rearrangement occurs by which nitrogenous atomic complexes, not normally yielding hexon bases, become altered into hexon bases or their combinations.

In all degrees of necrosis, the autolyzed material contained a smaller amount of hexon bases than the unautolyzed. In the liver with scattered focal necroses the decrease of the hexon nitrogen in per cent. of the total nitrogen amounted to 28.0 per cent.; in the diffuse necrosis 19.8 per cent. This would seem to imply that in the living tissue the hexon splitting enzyme is to some degree inhibited, probably through the action of the blood serum.

Hexon Bases in the Liver of the Horse.—The results obtained with the normal livers of horses agree in regard to the dry solids (22.6 per cent.) and the nitrogen of the dry tissue (11.6 per cent.) with those obtained for the dog. The nitrogen precipitable with phosphotungstic acid, however, is surprisingly low, amounting to only 8.3 per cent. It would seem inadvisable to attempt an explanation of this difference, since these animals were not absolutely normal, in that they had been utilized for the purpose of preparing antitoxin and had died during such treatment, though no lesions were found in the liver. The injection of bacterial products may set up processes in the cell which tend to reduce its hexon content without changes evident histologically. The percentage which fractions "A" and "B" of such livers bears to the total hexon content is not far removed from that found for each in the case of the normal dog liver.

The two lesions which served as examples of necrosis presented the complicating feature of amyloid. This fact renders the series not exactly comparable to the previous one. The increase in nitrogen of the dry substance over that of the normal is present here also, and the total hexon base nitrogen has increased to 13.4 per cent. This latter result may be caused by the heaping up of the bases as products of autolysis in the large necrotic areas. More probably, however, it is to be attributed to the amyloid degeneration, in which the normal cellular proteids with relatively small percentage (10-30 per cent.) of diamino-nitrogen are replaced by amyloid, the proteid constituent of which, in the liver and spleen as

shown by Neuberg,¹¹ contains twice as much (50-60 per cent.) diamino-acid nitrogen. This rearrangement in the hexon content of the proteids of the organ has also resulted in a marked change in the relation which the arginin and histidin as well as the lysin bears to the total amount of hexon base precipitate. "A" forms only 15.2 per cent. and precipitate "B" 68.7 per cent. of the whole diamino-acid nitrogen.

SUMMARY.

1. The liver of the dog in which necrosis has been produced by injection of hemotoxic immune sera is characterized in the less marked forms by a storing up of nitrogen in the persisting living cells, while in the diffuse forms the total nitrogen content is but slightly above the normal. This last is to be explained by the great diminution in persisting liver substance which limits the power of nitrogen accumulation.

2. In all forms of necrosis there occurs an absolute increase of nitrogen precipitable by phosphotungstic acid (hexon bases) but the percentage increase, in relation to total nitrogen, diminishes in those forms (focal) in which the products of autolysis may be readily carried off by the blood stream and greatly increases in the diffuse form with large areas in which the circulation is seriously impaired.

3. Although the absolute amount of nitrogen representing arginin and histidin varies, a relative increase is evident when this fraction is compared with the total diamino-nitrogen. This increase corresponds to the degree of necrosis and attendant circulatory disturbance and indicates that in necrosis as opposed to degeneration (Wakeman) arginin is not split up by arginase. The lysin also bears a definite relation to the total hexon nitrogen.

4. The diamino-nitrogen of the normal liver after autolysis *in vitro* shows a slight variable increase over that of the unautolyzed, while the necrotic livers showed a decided decrease.

5. The diamino-acid nitrogen of normal horse liver is only about one-half of that of the dog; the relative proportion of the bases is about the same. In necrotic livers with amyloid the diamino-nitrogen is markedly increased which is in accord with Neuberg's observations on the high hexon base content of amyloid.

¹¹ Neuberg, Ueber Amyloid, *Verhand. d. Deut. path. Gesellsch.*, 1904, vii, 19.

Conclusions.—Upon the whole then the chemical processes occurring in the hepatic cell undergoing rapid or immediate necrosis and those accompanying a slow “degeneration,” as for example in phosphorus poisoning, must be different and distinct as would be expected from the histological findings. In necrosis we find the cell in a complete state of disorganization and decomposition and hence autolysis begins immediately, but in the changes occurring in the cell in the so-called degenerations, as phosphorus poisoning, the nucleus remains intact, thereby insuring to a certain extent the life or at least partial function of the cell. That under the latter circumstance a disturbed condition does exist is evidenced by the heaping up of fat in the cell, and although the results of the various investigations upon the altered processes in the liver of animals poisoned with phosphorus tend to show that this change is an autolysis, in which certain amino-acids appear as the result of the splitting of the proteid molecule, it is not of the same type as that appearing in the necrotic cell. This is shown by a comparison of Wakeman’s findings, which indicate definitely a diminution of hexons in the liver, with ours which show a great increase.

Examinations of the human liver, by a direct method without hydrolysis, but few in number, it is true, tend to the same conclusion. Taylor,¹² for example, found arginin in a liver with widespread necrosis, the result apparently of chloroform poisoning; from seven other livers, representing various lesions (dysenteric abscess, fatty degeneration, pyemia and acute yellow atrophy), he was unable to isolate this substance. Soetbeer¹³ also was unable to find hexon bases in a peculiar type of cirrhosis with acute degeneration.

This difference in the hexon content of the liver of “degeneration” and that of necrosis is so striking that it would appear to be due to a difference in the nature or rapidity of the cell destruction, though it may to some extent be explained by the disturbances of circulation which occur in the necrosis and which, presumably, are absent in degeneration.

¹² Taylor, A. E., Ueber das Vorkommen von Spaltungsprodukten der Eiweisskörper in der degenerirten Leber, *Zeit. f. physiol. Chem.*, 1902, xxxiv, 580. On the Occurrence of Amino-acids in Degenerated Tissue, *Univ. of California Publications*, 1904, i (Path.), 43.

¹³ Soetbeer, F., Ueber einen Fall von akuten Degeneration des Leberparenchyms, *Arch. f. exper. Path. u. Pharm.*, 1903, 1, 294.

Our observations show also that care must be exercised in drawing conclusions from results obtained by autolysis *in vitro*. It seems distinctly doubtful whether the autolysis of the cell which occurs under such circumstances has any relation to autolytic changes during life.

EXPERIMENTAL LIVER NECROSIS; II. ENZYMES.¹

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The experiments about to be described represent an attempt to determine the relation of the intracellular hepatic enzymes to chemical changes occurring in liver necrosis. Our results are based on a comparison of the variations in the enzymotic equilibrium of the normal hepatic cells with those occurring in necrosis of varying grades of severity. At present the chief and most promising method of detecting such variations consists in determining by means of post-mortem autolysis the condition under which the cell is existing at the time of the death of the animal, and the rapidity, nature and extent of the changes which occur after the commencement of the autolysis. We are well aware that the interpretation of the results of post-mortem autolysis in relation to cellular activity during life is open to objection and may not have the importance usually ascribed to it.

Our investigation of the enzymotic activity of the liver tissue under normal circumstances and in varying degrees of necrosis may naturally be subdivided as follows:

1. A determination in a quantitative way of the degree of autolysis which the tissue undergoes after death.
2. A study of the individual enzymes with reference to the part which they play in the general course of autolysis.
3. A determination of the products formed as the result of

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such autolysis. These include the diamino-acids, which have been considered in the preceding paper,² where they more properly belong, and the monamino-acids to which, as represented by leucin and tyrosin, we have given considerable attention. It was our intention to determine, by perfusion of livers in various stages of necrosis, the changes in the composition of the blood which might occur, but owing to the great amount of labor entailed in the present studies this has been unavoidably postponed.

Comparative Estimation of Products of Autolysis.—In the study of the changes which the nitrogenous material undergoes during autolysis *in vitro* an attempt was made to carry out a partition analysis of the non-coagulable nitrogen. This method has already been employed with good results by v. Drjewecki³ to determine the effect of alkalies of varying strengths upon autolysis. His results, as well as those of Wiener,⁴ point to the sensitiveness of the autolytic enzymes to changes in reaction, especially those due to alkalies, and these investigators conclude that the alkalies of the serum are responsible for the well-known inhibitory effect of the serum upon autolysis. Baer⁵ and his associate, Loeb,⁶ admit the inhibitory effect of the serum but are inclined to attribute it to the action of the serum globulin.

These facts, as well as those brought out by Lang,⁷ concerning the inhibitory effect of large quantities of toluol upon autolytic processes, although other factors may have influenced the results of the latter, all tend to emphasize the fact that in performing experiments of this character too much attention cannot be given to the attainment of absolutely comparable conditions in all the various experiments. With these points in mind we have endeavored to control our work in every way, as is shown in the following detail of the experiments.

Quantities of the fresh tissue of known weight were ground to such a state of subdivision that when mixed with water or neutral

² See first paper of this series, "Hexon Bases."

³ v. Drjewecki, A., Ueber den Einfluss der alkalischen Reaktion auf die autolytischen Vorgänge in der Leber, *Biochem. Zeit.*, 1906, i, 229.

⁴ Wiener, H., Ueber den Einfluss der Reaktion auf autolytische Vorgänge, *Zent. f. Physiol.*, 1905, xix, 349.

⁵ Baer, J., Ueber die Wirkung des Serums auf die intracellularen Fermente, *Arch. f. exper. Path. u. Pharm.*, 1906, lvi, 68.

⁶ Baer, J. and Loeb, A., Ueber die Bedingungen der autolytischen Eiweisspaltung in der Leber, *Arch. f. exper. Path. u. Pharm.*, 1905, liii, 1.

⁷ Lang, S., Ueber desamidierung im Tierkörper, *Beit. z. chem. Physiol. u. Path.*, 1904, v, 321.

Ringer's solution the mixture could be readily drawn up in a pipette. This mixture, usually consisting of two hundred grams of liver, was made up to 1,200 cubic centimeters and placed in a sterile flask and the mixture covered with a layer of toluol. This latter substance was well shaken in, after which were pipetted off, as controls, two samples of two hundred cubic centimeters each. Both were thoroughly sterilized in the autoclave in order to stop autolysis; one was examined immediately, as an initial control, the other was placed with the original mixture in the thermostat (37.5° C.) and examined at the conclusion of the experiment as a final control. The material in the thermostat was shaken from time to time and at intervals of one, three, five and eight days samples of the main mixture were removed for analysis by the same method as the controls. The analysis of the samples, after they were shown to be bacteria free,⁸ took place in the following manner:

The mixture was pipetted into a beaker and sufficient water was added to allow of easy coagulation of the proteid material present. Acetic acid was added to slightly acid reaction after the boiling point was reached. The coagulated proteid was removed by filtration and repeatedly and thoroughly washed with boiling water. The volume of the filtrate and washings was made up to eight hundred cubic centimeters. Of this, twenty-five cubic centimeters served for the determination of the total nitrogen by the Kjeldahl-Gunning method, one hundred for the estimation of ammonia according to the method of Shaffer as applied to the urine, one hundred for the uric acid determination, using the Hopkins-Folin method, and fifty to determine the amount of nitrogen not precipitable by phosphotungstic acid in sulphuric acid solution, the so-called monamino-nitrogen. An attempt was also made to determine the nitrogen precipitable (proteoses) by zinc sulphate but our results are so incomplete that little can be gained from their discussion. In all cases duplicate determinations were made and the figures given represent their average. Dogs were employed in all experiments.

In Table I are presented the results of the nine experiments which differed in their conditions for the purposes of control, as follows:

Two normal livers (52 and 54) with their usual blood content, the diluting fluid of one being distilled water and of the other neutral Ringer's

⁸ For this purpose it was deemed sufficient merely to examine stained films though when the final sample of each mixture was taken cultures were made. In this series representing nine livers no contamination occurred.

solution. This solution was prepared in the ordinary way with the exception that the sodium bicarbonate was not added in order to avoid an alkaline medium.

Two normal livers (53 and 58) washed *in situ*, the one with water and the other with neutral Ringer's solution.

One necrotic liver four hours after injection (57). An attempt was made to wash this liver with water but on account of the extensive thrombosis it was only partly successful. It is therefore referred to as "halfwashed."

Two necrotic livers forty-eight hours after injection (48 and 56); one unwashed diluted with water; the other washed and diluted with neutral Ringer's solution.

Two livers (43 and 49) five days after injection, both showing necrotic lesions with early repair; one washed and diluted with Ringer's, the other unwashed but diluted with water.

In each instance in which the livers were washed the procedure was begun under ether while the animal was alive. With the exception noted the livers were completely blanched save for slightly tinged areas about the more diffuse foci of necrosis.

The results in Table I, in terms of nitrogen, are expressed in percentages of the total nitrogen of the dry tissue and of the total non-coagulable nitrogen. A critical consideration of the figures presented allows of the following statements:

Non-coagulable Nitrogen.—The inhibiting effect of the blood serum upon the extent of the autolysis of both normal and necrotic tissue is decisively shown. The percentage of non-coagulable nitrogen in the case of the unwashed normal organs increased from 10.7 and 9.7 to 19.9 and 29.1 per cent. respectively, an increase of 100 and 200 per cent., on the eighth day; while in the washed normal livers the average increase at the eighth day amounted to 450 per cent. The increase in the five day necrotic unwashed liver was 127 per cent.; that of the washed tissue 349 per cent. The forty-eight hour washed tissue (Dog 56) with a very extensive necrosis, showed the greatest increase, equivalent to 856 per cent. of the control. The increase of the four hour experiment (congestion and thrombosis) hardly equaled that of the washed normal.

Wherever water was employed in washing or in diluting, the autolysis was distinctly less than when neutral Ringer was used. (Compare Dogs 52 and 54.)

Concerning the rapidity of the autolysis, it may be noticed that, though the initial increase during the first day in the case of the unwashed tissues is but one-half of that of the washed,

TABLE I.—Autolysis; nitrogen partition.

NORMAL.				4 HOURS.		48 HOURS.		NECROSIS.		5 DAYS.		NECROSIS.		DURATION.
Not Washed.		Washed.		Washed.*		Not Washed.		Washed.		Not Washed.		Washed.		
52†	54	53	58	57	48†	56	43†	49						
Percentage of total nitrogen in non-coagulable form.														
10.7	9.7	13.5	9.5	8.5	12.7	8.3	26.6	18.3	Control 1 day 3 days 5 days 8 days Final Control					
15.5	18.6	35.5	23.6	19.3	20.0	18.5	30.4	41.1						
18.2	27.8	57.6	38.5	24.1	24.9	65.1	51.1	48.5						
10.8	27.8	67.5	49.7	30.8	30.8	75.7	54.3	61.0						
10.9	29.1	70.1	54.2	37.9	32.1	79.4	60.4	82.3						
13.4	11.6	14.0	8.9	7.4	14.5	7.2	22.1	18.1						
Phosphotungstate-filtrate nitrogen (monamino-acid).														
7.2	6.7	7.4	4.2	44.5	5.5	64.7	10.7	81.1	3.6	43.0	15.0	56.5	11.3	51.7
12.4	13.7	30.9	18.2	77.1	14.7	72.8	17.2	86.0	16.4	88.6	29.7	75.4	30.0	73.1
14.1	21.4	49.8	31.8	82.6	19.0	82.5	22.6	90.8	54.7	84.2	37.2	72.8	39.3	81.0
16.2	22.9	56.9	40.3	81.0	25.3	85.4	26.0	84.4	64.3	84.9	43.8	80.7	53.0	86.9
16.9	23.9	57.8	46.2	85.2	32.3	85.2	27.2	84.7	70.1	88.3	46.9	77.6	71.9	87.3
8.4	8.1	7.6	4.8	54.3	6.8	90.5	8.9	75.4	3.7	51.5	11.9	53.8	11.9	66.0
63.0	70.0	54.1												
Ammonia nitrogen.														
0.74	0.49	0.59	4.3	0.79	0.80	0.85	2.08	8.6	0.85	10.2	2.08	8.6	1.10	6.0
1.38	0.90	1.41	4.0	1.05	1.46	1.50	4.4	10.6	1.50	8.1	4.4	10.6	2.20	5.3
1.45	1.06	2.45	4.2	1.9	2.16	2.78	4.7	9.2	2.78	4.3	5.8	9.2	3.30	6.9
1.63	1.60	2.52	3.8	1.6	2.19	3.25	5.8	9.6	3.25	4.3	6.4	9.6	3.99	6.5
2.08	1.22	2.45	3.5	2.9	2.34	3.01	6.4	10.6	3.01	3.8	2.2	10.6	5.11	6.2
0.66	4.9	0.67	5.2	7.6	1.02	0.85	2.2	10.0	0.85	11.6			1.43	7.9

*Washing incomplete.

†Distilled water used instead of neutral Ringer's solution.

Figures in upper left-hand corner show percentage of total nitrogen; those in lower right-hand corner, of non-coagulable nitrogen.

it represents, as does also the increase of the washed, fifty per cent. of the total autolysis. On the third day, however, the autolysis has reached its maximum in the unwashed tissues, while the washed organs continue to increase until the eighth day, when the autolysis in their case is also apparently complete.

In the forty-eight hour lesions in which, histologically, the autolysis of the necrotic areas would appear to be at its height, we see that the autolytic processes *in vitro* were also very active. The increase at the end of the eighth day in the unwashed liver (Dog 48) was about 150 per cent., but after the removal of the inhibitory action of the blood (Dog 56) the increase rose to almost 900 per cent. The same thing is evident in the fifth day lesions but is not so pronounced.

The rapidity with which the autolysis reaches its maximum is of course dependent upon various factors. The attainment of the maximum signifies that the reaction velocities of the system, made up of substrat, hydrolytic agent and enzyme, have reached an equilibrium, caused, no doubt, by the non-removal of the products of autolysis. Since we must assume that the substrat and enzyme are the same in the normal tissues of both washed and unwashed organs, the varying factor must consist in the hydrolysis which, from the work of Wiener, seems undoubtedly due to the unneutralized acids formed during autolysis as first described by Magnus-Levy.⁹ The acids which are formed in the normal metabolism of the cells are neutralized by the ammonia and excess of bases in the blood; hence autolysis does not occur in the living cell. As soon as the serum with its neutralizing power is removed, as in the washed organs or where the acids use up the excess of bases as in the center of a large area of necrosis, the conditions necessary for autolysis are present and hydrolysis of the substrat protoplasm takes place.

Phosphotungstate Filtrate Nitrogen (Monamino-acids).—The phosphotungstate precipitate has been disregarded here, for, as it consists of diamino-nitrogen it has been sufficiently covered in the autolysis experiments in connection with the study of the hexon bases.¹⁰

By far the major portion of the nitrogen in the filtrate is in

⁹ Magnus-Levy, A., Ueber die Säurebildung bei der Autolyse der Leber, *Beit. z. Chem. Physiol. u. Path.*, 1902, ii, 261.

¹⁰ See first paper of this series, "Hexon Bases."

the form of monamino-acids.¹¹ The table indicates the percentage of the fraction in terms of the total nitrogen of the tissue as well as of the total non-coagulable nitrogen. Our figures for the controls indicate that in the normal tissue, washed or unwashed, 4.2 to 7.4 per cent. of the total nitrogen is to be attributed to nitrogen not precipitable with phosphotungstic acid. Of the forty-eight hour lesions, that with the most marked diffuse necrosis (Dog 48) showed 10.7 per cent. of the total nitrogen in that form, while the other, of the focal type (Dog 56), had only 3.6 per cent. or slightly less than the lowest of the normal figures. Also, in the first of this pair, 81.1 per cent. of the non-coagulable nitrogen was in the form of monamino-acid while the other showed only 43.0, again somewhat less than normal.

These two experiments illustrate most decisively the point which Taylor's¹² results seem to indicate. That is, there is an absence of monamino-acids in pathological conditions of the liver accompanied by little or no necrosis, while in necrosis of the diffuse type both the monamino- and diamino-acids are present. We have elsewhere¹³ suggested that the relation of circulatory disturbances to the removal of the products of autolysis is an all-important factor. This is further supported by the two experiments under discussion which indicate that the organ with the focal lesions contained no more monamino-nitrogen than did the normal tissue. In this case the circulation was very slightly, if at all, impaired, and these acids, if they were formed, were removed immediately by the blood stream. In Experiment 48 the large necrotic areas, the centers of which were remote from circulatory fluids, held the acids as they were produced. That these substances are produced in autolysis of this type *in vivo* in large quantities is also indicated by the fact that 81.1 per cent. of the non-coagulable nitrogen of this liver was present in the fresh tissue as nitrogen non-precipitable with phosphotungstic acid. This value approaches that found in all the other cases after autolysis *in vitro* has proceeded for from one to three days.

¹¹ v. Drjewecki, A., Ueber den Einfluss der alkalischen Reaktion auf die autolytischen Vorgänge in der Leber, *Biochem. Zeit.*, 1906, i, 229.

¹² Taylor, A. E., Ueber das Vorkommen von Spaltungsprodukten der Eiweisskörper in der degenerierten Leber, *Zeit. f. physiol. Chem.*, 1902, xxxiv, 580. On the Occurrence of Amino-acids in Degenerated Tissue, *Univ. of California Publications*, 1904, i (Path.), 43.

¹³ See first paper of this series, "Hexon Bases."

The control figures of the five day necrosis, as shown by Experiments 43 and 49, also indicate a high percentage of the total nitrogen of the tissue as monamino-nitrogen. As, however, an unusually large amount of the total nitrogen occurs in non-coagulable form the percentage relation of the monamino acids to the latter is about normal. These lesions were very extensive but of the focal type and the cells at the fifth day were undergoing repair. Hence, although autolytic processes were going on in the tissue at that time, the products were removed as fast as they were formed and no increase in amount occurred in the organ.

The same differences in the velocity and degree of autolysis *in vitro* between the washed and unwashed organs are also very evident and require no discussion since they are due to the same causes. It is interesting to note that the nitrogen occurring as monamino-acids reaches at the end of the first day about 80 per cent. of the non-coagulable nitrogen and then although autolysis may greatly increase, their formation increases only in the same proportion. The exception to this is in case of Dog 48, already discussed, where the percentage was high in the tissue itself and remained at the same level during autolysis *in vitro*. This would seem to point to the fact that as far as monamino-acids are concerned their formation in autolysis *intra vitam* occurs in the same manner and by the same chemical processes as they do in autolysis *in vitro*.

v. Drjewezki found that at the end of seventy-two hours autolysis the monamino-acids took up about sixty per cent. of the total nitrogen of the tissue. This figure is somewhat higher than we obtain at this stage of autolysis but in some instances it was reached on the fifth or eighth day.

Ammonia.—As a result of the work of Loewi,¹⁴ Jacoby,¹⁵ Lang and others, considerable interest has become attached to the power of the surviving liver tissue to produce ammonia, especially in view of the current opinion as to the importance of this product, after it has been split off from the amino-acids, as a step in the formation of urea. This interest has been heightened by the appearance of ammonia in increased absolute and percentage amounts in the urine in certain hepatic disorders, thus apparently bringing these matters into correlation.

¹⁴ Loewi, O., Ueber das Harnstoffbildende Ferment der Leber, *Zeit. f. physiol. Chem.*, 1893, xxv, 511.

¹⁵ Jacoby, M., Ueber die fermentative Eiweisspaltung und Ammoniakbildung in der Leber, *Zeit. f. physiol. Chem.*, 1900, xxx, 149.

We have studied the question in two ways. First, in connection with the nitrogen partition of the autolysis now under discussion, and secondly, after the manner of the discoverer¹⁵ of the ammonia-forming power of the liver. This latter part of the work will be discussed separately.

In the partition tables it is seen that although the ammonia content of the necrotic livers is greater than that of the normal it runs parallel with the increase in the amount of non-coagulable nitrogen. Hence the percentage figures show no regular increase or diminution though variations occur owing to the large limit of error dependent on the small amounts of ammonia formed. A comparison of a forty-eight hour necrotic liver (56), which offers an exception to the above statement, in that it shows a progressive diminution with a normal washed liver (53), is instructive. In 53 the normal percentage of ammonia of the non-coagulable nitrogen runs along about four per cent. throughout the experiment. In 56, however, the control shows a high initial ammonia content (10.2), which on the third day dropped to that of the normal washed liver (53) and remained at that level to the end of the experiment.

We explain this variation in the ammonia formation by the assumption that this tissue contained *intra vitam*, as the result of the necrosis, proportionately larger amounts of ammonia liberating compounds than the normal. As, however, the autolysis proceeded less of these products were formed in relation to the non-coagulable nitrogen than was the case in the autolysis of the normal. Hence the percentage figure dropped. Or if we allow for the initial difference we find that the percentage increase is the same in both cases.

The great increase in the amount of non-coagulable nitrogen which occurred between the first and third day (18.5 to 65.1 per cent.) in Dog 56 could not have included the formation of ammonia compounds, since the increase of these latter bodies in relation to the total nitrogen was so slight that there occurred an actual percentage decrease in relation to the non-coagulable nitrogen.

All this would seem to indicate that the production of ammonia which occurs in the autolysis of the liver *in vitro* is the result of a decomposition of coagulable nitrogen in the

¹⁵ Jacoby, M., Ueber die fermentative Eiweisspaltung und Ammoniakbildung in der Leber, *Zeit. f. physiol. Chem.*, 1900, xxx, 149.

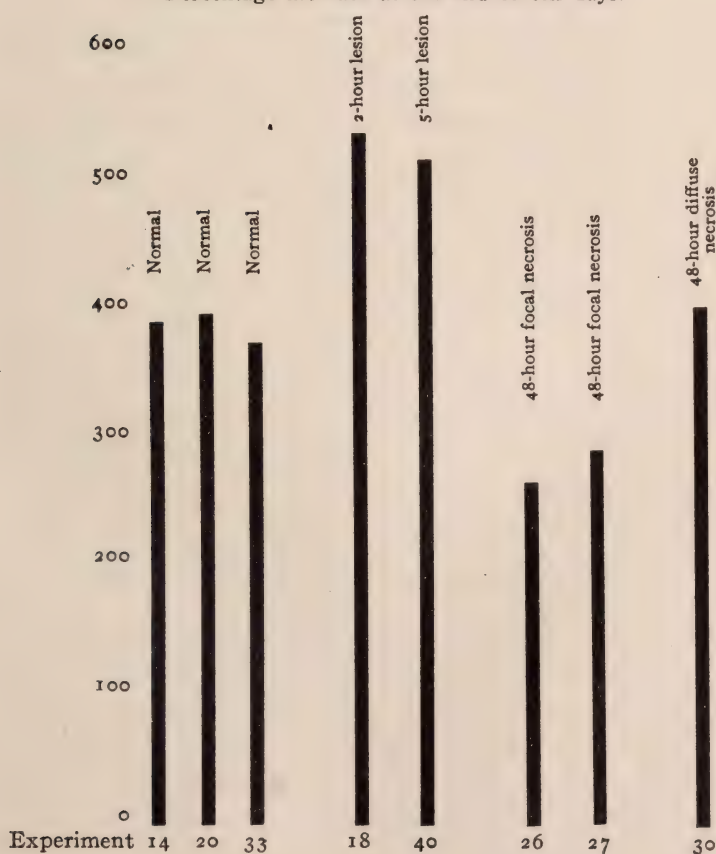
cell. That is deamidization of the amino-acids and the splitting of urea does not take place to any greater extent in the necrotic tissue undergoing autolysis than it does in the normal.

Separate Ammonia Determinations.—These experiments were some of the earlier ones performed and were carried out after the fashion of the investigations reported by Jacoby. A weighed amount, 200 grams, of the finely divided fresh liver tissue was made up to 600 cubic centimeters with distilled water and the well-mixed fluid divided into twelve equal parts. Four of these samples were sterilized immediately for controls. Two were analyzed at once as initial controls, while two, for the purpose of final controls, were placed with

TABLE II.

Ammonia.

Percentage increase at the end of ten days.



the remainder of the portions in the thermostat. At varying periods, duplicate samples were removed for analysis. The ammonia was determined according to a modification of Shaffer's method for the urine. The accompanying diagram indicates in a schematic way the results of the experiments.

It is somewhat difficult to make comparison of these results with those just reported in the partition series since we have no determination of the amount of non-coagulable nitrogen at the various periods; hence the figures represent only the percentage increase of ammonia nitrogen based on its amount in the control sample. Although Jacoby gives in his tables only the amount of ammonia nitrogen formed without taking into consideration the question of dry solids and nitrogen of the dry residue, a recalculation of his figures from average results of our normal livers indicates that more ammonia nitrogen was formed in our experiments than in his. On the other hand, however, our figures are not as high as those reported by Soetbeer.¹⁶ In opposition to the partition series, our figures indicate a larger amount of ammonium compounds in the initial control sample of the normal tissue than in those with varying degrees of necrosis and degeneration. This seeming anomaly we are unable to understand or explain. As, however, the percentage increase figures upon which the diagram is calculated are based upon the initial control as zero, the variable and anomalous control factor is excluded.

Considered in this way it will be seen that the three normals showed an increase of ammonia-nitrogen over the control of from 378 to 396 per cent., an agreement which serves well as a basis for comparison of the experiments on necrotic and degenerated tissue. In the case of the focal necroses the increase is less than the normal, amounting only to 265 to 290 per cent. On the other hand, the diffusely necrotic tissue evidenced the same power to produce ammonia-forming compounds as the normal. In the two samples of congestion and thrombosis, the lesion being of two to five hours' duration, more ammonia was produced than in the normal. These results would seem to indicate that during the initial stage of the process when the liver is intensely congested an increase in ammonia output must occur. This, however, is not supported by our metabolism experiments.¹⁷

¹⁶ Soetbeer, F., Ueber einen Fall von akuten Degeneration des Leberparenchyms, *Arch. f. exper. Path. u. Pharm.*, 1903, 1, 294.

¹⁷ See third paper of this series "Nitrogenous Metabolism."

Uric Acid.—The investigation concerning uric acid has yielded results of not sufficient interest for presentation in a table. The only point of importance is that a gradual diminution occurs which ceases on the third day. Since in the autolysis of uric acid ammonia is formed, this factor must influence to a slight extent the increase in ammonia observed in the partition experiments.

Arginase.—In the endeavor to explain the results in connection with the hexon bases, reported in the first paper of this series, a few experiments were conducted in the attempt to prepare from normal and necrotic livers an active substance, according to the method of Kossel and Dakin,¹⁸ which would hydrolyze arginin into ornithin and urea. Preparations were made by both the ammonium sulphate and acetic acid-ether methods outlined by these investigators and solutions of these were added in aliquot parts to an arginin solution of known strength. The determinations were made sometimes upon the phosphotungstic precipitate, sometimes upon the filtrate from this and once upon both. The aliquots were allowed to autolyze for one, three and five days and controls were done at the beginning and at the end of the experiment.

TABLE III.

Arginase.

Experiment.	Lesion.	Method of Preparation.	Estimation on Phosphotungstate.	c.c. N/10 ACID.			
				Control.	1 day.	3 days.	5 days.
15	Normal.	$\frac{2}{3}$ Saturation $(\text{NH}_4)_2\text{SO}_4$ precipitate.	filtrate.	1.6	2.65	2.75	2.65
15	Normal.	ditto.	filtrate.	4.55	5.95	6.25	6.80
15	Normal.	ditto.	precipitate.	5.75	4.45	4.25	3.65
19	Normal.	ditto.	precipitate.	4.50	3.40	5.00	5.65
42	Normal.	Extraction acetic acid. Complete saturation $(\text{NH}_4)_2\text{SO}_4$ precipitate.	filtrate.	5.20	4.45	4.15	4.30
18	2 hours.	Extraction acetic acid. Complete saturation $(\text{NH}_4)_2\text{SO}_4$ precipitate.	precipitate.	11.45	12.10	12.40	9.90
40	5 hours.	Extraction acetic acid. Complete saturation $(\text{NH}_4)_2\text{SO}_4$ precipitate.	filtrate.	5.40	4.65	5.30	4.40
16	Focal necroses.	ditto.	precipitate.	6.75	6.70	6.55	5.70
28	Diffuse necrosis	ditto.	precipitate.	6.10	6.90	6.95	6.10
28	Diffuse necrosis.	Extraction dilute HCl.	precipitate.	8.05	9.80	8.45	8.60

¹⁸ Kossel, A. and Dakin, H. D., Ueber die Arginase, *Zeit. f. physiol. Chem.*, 1904, xli, 321. Weitere Untersuchungen ueber fermentative Harnstoffbildung, *ibid.*, 1904, xlii, 181.

Our results in regard to the normal liver agree with those of Kossel and Dakin. The preparations from necrotic livers gave negative or doubtful results, thus affording valuable confirmatory evidence of the position which we assumed as a result of our work upon the hexon bases, namely, that in extreme diffuse necrosis where large areas remote from the circulation are undergoing necrosis there occurs a marked increase in hexon base content of the tissue. In such areas, evidently, the arginin is not split up to any noticeable extent. The experiments of Wakeman¹⁹ do not show the presence of arginin to the marked extent which the author claims, as we have explained in our discussion of the hexon bases.²⁰

The table shows that of the ten preparations made from seven different livers, three normal, two necrotic and two with thrombosis, only one, the normal (15), showed any activity. In the others either no results were obtained or were so irregular that the experiments may be considered as negative.

In this one experiment with normal liver in which the precipitate obtained by complete saturation of the three-quarter saturated filtrate with ammonium sulphate was employed, the nitrogen of the filtrate from the phosphotungstic precipitate showed a gradual increase presumably due to the autolysis of the arginin added. These results would indicate that an active arginase can be obtained only from normal tissue. This is in complete accord with the results reported in the paper on the hexon bases in which it is shown that during the autolysis of necrotic liver tissue an increase in the hexon base content of the cell occurs.

Leucin and Tyrosin.—In view of the well-recognized presence at times of monamino-acids in the urine of individuals suffering with hepatic disorders, particularly acute yellow atrophy, and of the varying results reported by the different observers in regard to the question of the presence of these compounds in the liver tissue, it seemed advisable to examine the urine and the liver of the animals under observation as to the presence of leucin and tyrosin.

It would appear to be unnecessary for us to enter into a dis-

¹⁹ Wakeman, A. J., On the Hexon Bases of Liver Tissue under Normal and Certain Pathological Conditions, *Jour. of Exper. Med.*, 1905, vii, 292.

²⁰ See first paper of this series, "Hexon Bases."

cussion of the older literature concerning the variation in the results as to the presence or absence of leucin and tyrosin in the urine under many pathological conditions. This subject has been well discussed by Ewing and Wolf,²¹ who conclude that the differences observed are most probably due to faulty methods of technique and of confirmation. Of the recent work, to which this criticism cannot properly be applied is that of Taylor,²² who found these monamino-acids present in the liver of acute yellow atrophy as well as in that of probable chloroform poisoning. In both instances, supposedly, necrosis of varying degree had taken place. Wells²³ in a preliminary communication confirms these results for acute yellow atrophy. On the other hand, however, in other conditions to which he gives the general term of "degeneration," Taylor failed to find these substances. Again leucin and tyrosin usually appear in the urine of persons or animals poisoned with phosphorus and this fact has been associated with the occurrence of the well-known hepatic changes, chiefly fatty infiltration, which are known to occur in this condition.

The recent method devised by Fischer and Bergell, in which β -naphthalin sulphochloride is employed, and Abderhalden and Barker's modification of Fischer's esterification method are so time-consuming that we decided that for the purpose in view, the simpler methods were of sufficient accuracy to warrant their use. Ewing and Wolf in the paper mentioned above criticize severely the lead acetate method, originally employed by Frerichs and Städeler. They claim that the microscopic demonstration of leucin and tyrosin by this procedure is unreliable and the crystals supposed to be leucin may be in reality urates or urea. We have used a modification of the lead acetate method in which after the removal of the excess of lead by means of hydrogen sulphide

²¹ Ewing, J. and Wolf, C. G. L., The Clinical Significance of the Urinary Nitrogen, *Amer. Jour. of the Med. Sciences*, 1906, cxxxi, 751.

²² Taylor, A. E., Ueber das Vorkommen von Spaltungsprodukten der Eiweisskörper in der degenerirten Leber, *Zeit. f. physiol. Chem.*, 1902, xxxiv, 580. On the Occurrence of Amino-acids in Degenerated Tissue, *Univ. of California Publications*, 1904, i (Path.), 43.

²³ Wells, H. G., The Composition of the Liver in Acute Yellow Atrophy. Communication read at the first meeting of the Amer. Soc. of Biol. Chemists, Washington, May 8, 1907.

the filtrate is evaporated to dryness and the residue extracted with several portions of absolute alcohol to remove the urea, after which it is treated with repeated portions of ammoniacal absolute alcohol. The united extracts are allowed to evaporate almost to dryness, when characteristic crystals appear, if leucin or tyrosin is present in the original material. When sufficient quantities were present these microscopic findings were controlled by the usual chemical tests. We feel reasonably sure that the substances upon which we have based the following results were leucin and tyrosin.

TABLE IV.
Leucin and Tyrosin in the Urine.

Experiment.	Lesion.	Leucin.	Tyrosin.	Urine of
2	No necroses.	—	+	4th day.
34	No necroses.	+++	+	1st and 2d day.
1	Focal necroses.	+	+	1st day.
5	Focal necroses.	—	+	1st day.
23	Focal necroses.	++	+	1st and 2d day.
2	Diffuse necrosis.	—	+	1st day.
48	Diffuse necrosis.	—	++	1st and 2d day.
51	Diffuse necrosis.	—	++	2d and 3d day.

TABLE V.
Leucin, Tyrosin and Proteoses in the Liver.

Experiment.	Lesion.	Leucin.	Tyrosin.	Proteoses.	Age of Lesion.
16	Focal necroses.	—	+	+	48 hour.
32	Diffuse necrosis.	—	+	+	26 hour.
48	Diffuse necrosis.	—	++	+	48 hour.
51	Diffuse necrosis.	—	++	+	48 hour.

The table giving the results of the examinations of the urine shows that there is no regularity in the occurrence of these compounds. The type of the lesion has apparently no relation to the amount eliminated and the results presented justify the general consensus of current opinion that the appearance of these compounds is not to be regarded as pathognomonic of any one condition such as acute yellow atrophy or phosphorus or chloroform poisoning. In addition to the positive results presented in the table the urine of nine other animals was examined with negative results. In five of these the liver showed necroses, in four none.

The results of the examination of the liver substance point to the occurrence of tyrosin in larger amounts when the lesion was almost pronounced; thus in each of three livers with diffuse necrosis it was present, but in only one of the five examples of focal necroses did it occur. A normal liver and also one with degeneration but no necroses were likewise negative. In no condition did we find leucin. In four livers with extensive necrosis proteoses were found in considerable quantities while a normal liver yielded none. All of this is in agreement with the variable results of Taylor mentioned elsewhere.

It is evident, therefore, that leucin and tyrosin may be formed during the autolysis of the hepatic tissue, but their appearance in the urine or detection in the liver is dependent upon the condition of the hepatic cells not involved in the lesion. If these cells can take care of large quantities of monamino-acids carried to them normally by the portal vein we see no reason why, if they are present in sufficient numbers and properly functioning, that they should not react in the same way with the same acids formed during the autolysis. The appearance of these monamino-acids under any condition then would depend upon the quantitative relation of the necrosis to the actively functioning cells which are unaffected by the lesion.

Of considerable interest in connection with the finding by Salkowski²⁴ in the urine of various pathological conditions, more particularly a case of yellow atrophy, of an increased amount of nitrogen precipitable by alcohol, is the fact that although in the normal liver the residue remaining after the extraction with absolute alcohol and ammoniacal alcohol is small in amount, in the case of the necrotic tissues this amount is markedly increased. We have examined the residue as to its character and find that it consists mainly of proteoses. The removal of these compounds by way of the blood-stream would cause an increase in the urine of undetermined nitrogen usually ascribed to amino-acids. This occurrence explains those conditions characterized by a high rest-nitrogen without the presence of monamino-acids.

²⁴ Salkowski, E., Zur Kenntnis der Alkoholunlöslichen bzw. kolloidalen Stickstoffsubstanzen im Harn, *Berl. klin. Woch.*, 1905, xlii, 1581, 1618.

SUMMARY.

1. The presence of blood serum has a decided inhibitory effect on autolysis. Thus in the normal unwashed organs the non-coagulable nitrogen increase was 100 to 300 per cent., while in the washed it amounted to 450 per cent. The washed necrotic livers showed an increase of from 600 to 850 per cent., while that of the unwashed necrosis was only slightly above the normal unwashed.

2. While the initial amount of non-coagulable nitrogen varies it is greater in those livers showing the more extensive forms of necrosis. The final amount of autolysis is also greatest in livers of this type. As regards the rate of autolysis fifty per cent. of the total occurs in the first day in the normal and in all types of lesions both washed and unwashed. The maximum is usually reached on the third day in the unwashed, while in the washed there is a continued increase to the eighth day. At this time in the necrotic livers about two to three times as much of the total nitrogen is in the form of non-coagulable nitrogen as in the normal.

3. In the necrotic tissue the initial controls show the content of monamino-acids, with one exception, to be practically doubled. In the washed necrotic the final amount is seventy per cent. of the total nitrogen against forty-six to fifty-seven per cent. in the washed normal. In all cases the monamino-acid nitrogen runs parallel to the nitrogen in non-coagulable form, but in relation to the total nitrogen it shows a greater increase in the washed than in the unwashed organs.

4. The ammonia production in the necrotic livers as shown by the partition experiments is greater than that in the normal and this increase corresponds to that of the non-coagulable nitrogen. In the experiments concerning the absolute production of ammonia in the presence of serum a greater amount was produced in the two and five hours' lesions than in the normal livers. On the other hand, the forty-eight hour diffuse necrosis equaled the normal and the focal fell below.

5. Arginase was obtained from normal but could not be isolated from necrotic livers.

6. No constant relation could be demonstrated between the anatomical lesion in the liver and the presence of leucin and tyrosin in the urine. Leucin was found occasionally in the

urine, but never in the liver. On the other hand, tyrosin was constantly present in livers with diffuse but rarely in those with focal necrosis. In the instances of diffuse necrosis in which the liver and urine of the same animal were examined tyrosin was found in both.

7. The presence of large amounts of proteoses in the necrotic liver indicates that the elimination of these substances (colloidal nitrogen of Salkowski) under such circumstances may account for a part of the total nitrogen of the urine usually attributed to the monamino-acids.

EXPERIMENTAL LIVER NECROSIS; III. NITROGENOUS METABOLISM.¹

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We present here the results of experiments carried out upon dogs in which the general state of the nitrogenous metabolism of the animals was studied before and after the injection of hemotoxic immune sera. As has been stated elsewhere² the important organic lesion produced by such sera is a hepatic necrosis either focal or diffuse, according to the amount and strength of the serum employed. Such an experimental lesion seemed peculiarly adapted to the study of the function of the liver in general metabolism and of certain peculiar metabolic derangements which have an analogy to those noted in eclampsia, chloroform poisoning, vomiting of pregnancy and acute yellow atrophy. It must be clearly borne in mind, however, that this experimental method of producing hepatic necrosis allows of the infliction upon the liver of a single injury, in point of time, which if not followed by death is rapidly repaired and which is almost without other disturbing factors. Hence metabolic variations may

¹ Conducted under grants from the Rockefeller Institute for Medical Research. Read before the American Association of Pathologists and Bacteriologists, Washington, May 7, 1907. Published also in *Journal of Experimental Medicine*, 1907, ix, 552.

² See first paper of this series, "The Hexon Bases."

be transient and last but one or two days, and for this reason the resulting disturbance is not comparable to that produced by a continually acting cause with progressive lesion.

The experiments were carried out upon dogs kept in the usual well-ventilated metabolism cages and fed upon a purin-free diet of casein, cracker dust and lard. The amounts of the three dietary constituents varied for the different animals. They were calorifically sufficient and so regulated that the animal finally came into nitrogen equilibrium. The dogs were catheterized at the end of each twenty-four hour period and the urine thus obtained, added to that voided naturally. This was at all times carefully preserved from changes of any kind until the analytic work was completed. To the total twenty-four elimination was added distilled water to make the volume up to 800 cubic centimeters. When hemoglobinuria or albuminuria caused the appearance of proteid in the urine this was removed by heat and acetic acid, the coagulum being thoroughly boiled out with water and the washings added to the urine.

Upon these twenty-four hour samples the following determination was made: total nitrogen by the Kjeldahl-Gunning method; ammonia by the Shaffer method; urea by the Mörner-Sjoquist method; uric acid by the Hopkins-Folin method and creatinin by Folin's colorimetric adaptation of Weyl's qualitative test. The difference between the sum of these various factors and the total nitrogen is given as rest or undetermined nitrogen. Kynurenic acid was also looked for qualitatively in order to obtain evidence as to variations in the output of this substance.

The general procedure in these experiments was to place the animal upon nitrogen equilibrium and to conduct control determinations for a period of three days, after which the animal was injected with either normal or toxic sera and the experiment allowed to continue until death ensued or the metabolism had regained its normal level as shown by the control period. It is obvious that in experiments of this character it becomes extremely difficult, if not impossible, owing to variance in the toxicity of the sera and the susceptibility of the animals, to regulate the severity of the lesion, especially as the degree of the latter can be determined only by post-mortem examination. This fact prohibits the production in any two experiments, no matter how carefully planned, of absolutely comparable pathological conditions. This difficulty is brought out by the fact that

although each new lot of serum was tested for lethal action on dogs of approximately the same weight and conditions as those prepared for the experiment, only six out of twelve of the latter survived the first twenty-four period. These six, with a control dog receiving normal serum, constitute the experiments on which this communication is based.

These may be divided into four groups: one injected with normal serum in which no histological change took place; one with a weak toxic serum which caused no necrosis, but an extensive granular and vacuolar degeneration; four with toxic sera causing more or less extensive focal necroses and one with toxic serum producing diffuse necrosis.

TABLE I.
(Dog 18, normal serum.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid.	Creatinin.	Undetermined Nitrogen.	Notes.
Nov. 10	6.51	4.99 76.8	0.556 8.5	0.018 0.28	0.677 10.4	0.269 4.0	Injected 12 M. Dose: 1:738. Vomited.
11	6.09	4.81 78.9	0.492 8.1	0.013 0.21	0.633 10.4	0.142 2.4	
12	6.52	5.25 80.5	0.493 7.6	0.020 0.30	0.607 9.3	0.150 2.3	
13	6.60	5.06 76.6	0.510 7.7	0.017 0.26	0.576 8.7	0.437 6.7	
14	6.06	4.72 77.8	0.482 8.0	0.021 0.34	0.539 8.9	0.298 5.0	

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

Table I shows the result of the injection of normal serum. With this may be compared also Tables VI and VII, in which it is seen that the toxic serum was preceded by an injection of normal serum. In two of these the dose³ of the normal serum was greater than that of any injection of toxic serum. It will be seen that it was practically without effect although in Dog 48 (Table VI) a slight increase in the output of total nitrogen was evident. A consideration of the nitrogen partition indicates, however, that this increase is mainly at the expense of the rest-nitrogen and is to be explained by traces of foreign proteid of the rabbit's serum injected, too small to be removed by the ordi-

³ The figures representing dosage, for example 1:600, indicate that the dose was in the proportion of one cubic centimeter of serum to 600 grams of body weight.

nary methods. We possess, therefore, a series of controls upon which to base our conclusions concerning the effect of the toxic sera.

Table II gives the figures obtained as the result of injecting a weak serum,⁴ which caused extensive hepatic degeneration of the granular and vacuolar type but no necrosis.

TABLE II.
(Dog 12, Degeneration, No Necrosis.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid.	Creatinin.	Undetermined Nitrogen.	Notes.
Oct. 15	4.33	3.67 84.5	0.157 3.6	0.006 0.14	0.302 7.0	0.195 4.76	
16	3.77	3.24 85.7	0.131 3.5	0.005 0.13	0.285 7.6	0.109 3.07	
17	3.76	3.29 87.3	0.120 3.1	0.004 0.13	0.284 7.6	0.062 1.87	
18	3.16	2.72 87.1	0.104 3.3	0.004 0.13	0.241 7.6	0.060 1.87	
19	4.23	3.56 84.1	0.090 2.1	0.004 0.09	0.315 7.5	0.261 6.21	Injected 4.30 P. M.; weak toxic serum; dose 1:715.
20	3.37	2.66 78.9	0.165 4.9	0.003 0.09	0.288 8.5	0.254 7.66	
21	3.19	2.69 84.3	0.161 5.1	0.006 0.19	0.268 8.4	0.065 2.01	
22	3.02	2.60 86.1	0.122 4.0	0.002 0.06	0.260 8.7	0.036 1.14	
							Killed.

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

It is seen that a slight but transient rise in the total nitrogen occurred. A small part of this increase is attributable to the foreign proteid injected, with a corresponding rise in the undetermined nitrogen, both in absolute and percentage amounts. The absolute amount of urea nitrogen increased during the first twenty-four hours after injection but not in sufficient quantities to keep pace with the increase in total nitrogen, hence a percentage decrease occurred. The following day both the percentage and absolute amounts diminished markedly to be followed on the succeeding days by return to the normal percentage of urea output. The absolute quantity remained low since the total nitrogen did not return to normal. The ammonia output during the twenty-four hours succeeding the injection suffered a decided

⁴ The serum of a rabbit which was not bled until six weeks after immunization against dog's blood. Sera obtained so long after injection frequently show diminished hæmagglutinative and hæmolytic power.

diminution both in percentage and absolute figures. This decrease was exceedingly transient, since on the succeeding days the reverse occurred and both the absolute and percentage figures went much above the normal. The uric acid and creatinin showed no change but the rest-nitrogen increased considerably on the first and second days following the injection.

The reaction⁶ for kynurenic acid was positive on the day subsequent to the injection and passed off gradually. This would indicate an increase in proteid destruction.⁷

Of most importance is the diminution in the percentage of the total nitrogen eliminated as urea associated with a somewhat corresponding increase in the percentage output of ammonia and rest-nitrogen. This is the urinary picture which recently has been described as associated with the hepatic disorder supposed to underly the symptoms of chloroform poisoning, toxemia of

TABLE III.
(Dog 25, Focal Necroses.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid ⁵	Creatinin.	Undetermined Nitrogen.	Notes.
Dec. 2	4.77	3.55	0.443		0.405	0.372	
		76.5	9.1		8.4	6.0	
3	5.42	4.39	0.507		0.362	0.161	
		81.0	9.4		6.7	3.3	
4	5.24	4.11	0.440		0.298	0.392	
		78.4	8.4		5.7	7.5	
5	4.97	3.86	0.421		0.335	0.354	
		77.6	8.5		6.7	7.2	
6	6.02	4.68	0.496		0.362	0.482	
		77.4	8.2		6.0	8.4	
7	5.85	4.77	0.443		0.351	0.286	
		81.5	7.6		6.0	4.9	
8	5.92	4.95	0.313		0.323	0.334	Hburia.
		83.6	5.3		5.3	5.8	
9	9.33	7.66	0.587		0.430	0.653	Hburia.
		82.1	6.3		4.6	7.0	
10	6.46	5.40	0.376		0.360	0.324	
		83.5	5.8		5.6	5.1	
11	8.15	7.16	0.404		0.368	0.218	
		87.8	4.9		4.5	2.8	
12	8.22	7.07	0.461		0.366	0.323	
		86.0	5.6		4.5	3.9	No food taken; killed.

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

⁵ Amounts so small that they were not calculated.

⁶ Treatment of the urine with bromine water.

⁷ Mendel, L. B. and Jackson, H. C., On the Excretion of Kynurenic Acid, *Amer. Jour. of Physiol.*, 1898, ii, 1.

TABLE IV.
(Dog 43, Focal Necroses.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid.	Creatinin.	Undetermined Nitrogen.	Notes.
Feb. 2	7.74	6.31 81.5	0.444 5.7	0.018 0.23	0.417 5.4	0.551 7.2	
3							Feces mixed with urine.
4	6.95	5.50 79.1	0.406 5.8	0.013 0.17	0.338 4.9	0.693 10.0	
5	6.45	5.37 83.2	0.335 5.2	0.015 0.23	0.280 4.3	0.450 7.1	Injected 10:30 A. M.; toxic serum dose 1: 1738.
6	9.91	8.48 85.5	0.478 4.8	0.073 0.73	0.343 3.5	0.836 8.5	Vomited. Injected 3 P. M.; toxic serum; dose 1: 1200.
7	10.56	8.88 84.1	0.578 5.5	0.045 0.42	0.405 3.8	0.652 6.2	
8	7.65	6.31 82.5	0.479 6.2	0.009 0.12	0.386 5.0	0.466 6.2	
9							Urine lost.
10	4.85	3.84 79.2	0.288 5.9	0.007 0.14	0.341 7.2	0.374 7.6	Killed.

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

pregnancy and like conditions and which will be discussed more in detail after our results have been completely given.

Tables III, IV, V, VI and VII present the results of the experiments in which a true necrosis, either focal or diffuse, was obtained.

In these experiments the injection of the toxic sera^s was always quickly followed by a more or less marked increase in the elimination of total nitrogen which *persisted* for several days. During the first or second twenty-four hour period, after injection, occurred a slight increase in the percentage of urea nitrogen (three to five per cent.) which was followed on the succeeding days by a drop to normal, and in one experiment below normal. The ammonia nitrogen percentage of the total nitrogen diminished gradually after the injection and reached its lowest point about the second or third day, after which, in some cases, as in Dogs 49 and 43, it returned to normal; in others, as in Dogs 25, 45, and 48, it remained low. The more advanced the repair

^s In three of these experiments the first injection was followed by a second after a varying interval. This fact renders the figures after the time of the second injection less comparable.

at the time of death, the nearer the percentage of ammonia nitrogen had returned to the normal.

The uric acid nitrogen suffered a marked, though transient, increase.⁹ In the three experiments where successive injections were given, the second injection in each instance caused an increase of uric acid on the following day after which it returned to normal.

The absolute creatinin nitrogen output was noticeably augmented after injection; this increase, however, was not quite in the same proportion as the total nitrogen, hence the creatinin nitrogen per cent. of the total tended at times to show a slight diminution.

The undetermined or rest-nitrogen which in a general way may be said to indicate the output of amino-acids, polypeptids or proteose-like bodies¹⁰ also underwent a decided increase after injection.

An increase in kynurenic acid elimination after injection was

TABLE V.
(Dog 45, Focal Necroses.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid.	Creatinin.	Undetermined Nitrogen.	Notes.
Feb. 3	6.70	5.50	0.342	0.014	0.274	0.570	
		82.1	5.1	0.21	4.1	7.5	
4	6.57	5.37	0.491	0.013	0.296	0.400	
		81.7	7.5	0.20	4.5	6.1	
5	6.43	5.05	0.452	0.012	0.274	0.642	
		78.5	7.0	0.18	4.1	10.2	
6	6.52	5.33	0.455	0.013	0.265	0.457	
		81.7	7.0	0.20	4.1	7.0	Injected 10 A. M.; toxic serum; dose 1:1500.
7	8.99	7.51	0.560	0.105	0.359	0.456	
		83.5	6.2	1.17	4.0	5.1	
8	7.97	6.25	0.524	0.010	0.300	0.886	
		78.4	6.6	0.13	3.9	11.0	Injected 10 A. M.; toxic serum; dose 1:1000.
9	5.30	4.01	0.441	0.055	0.298	0.928	
		75.6	8.3	1.04	5.7	9.4	
10	10.30	8.20	0.646	0.030	0.349	1.075	
		79.6	6.3	0.28	3.4	10.4	
11	8.37	6.71	0.598	0.021	0.313	0.728	
		80.2	7.1	0.25	3.7	8.8	
12	7.45	5.99	0.447	0.009	0.326	0.678	
		80.0	6.0	0.12	4.5	9.4	Killed.

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

⁹ For a detailed discussion of this subject see fourth paper of this series, "Nuclein Metabolism."

¹⁰ Salkowski, E., Zur Kenntnis der Alkoholunlöslichen bzw. colloidalen Stickstoffsubstanzen im Harn, *Berl. klin. Woch.*, 1905, xlii, 1581, 1618.

TABLE VI.
(Dog 48, Diffuse Necroses.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid.	Creatinin.	Undetermined Nitrogen.	Notes.
Feb. 19	6.80	5.90 86.7	0.374 5.5	0.018 0.26	0.373 5.5	0.135 2.0	
20	6.55	5.53 84.4	0.360 5.5	0.018 0.27	0.364 5.6	0.278 4.2	
21	6.38	5.41 84.8	0.358 5.6	0.024 0.37	0.326 5.2	0.228 4.0	Injected 5 P. M.; normal serum; dose 1: 600.
22	7.00	5.76 82.3	0.406 5.8	0.024 0.34	0.338 4.8	0.472 6.8	
23	6.53	5.50 84.2	0.376 5.8	0.021 0.32	0.326 5.0	0.307 4.7	
24	6.10	5.00 82.0	0.400 6.6	0.018 0.30	0.314 5.1	0.368 6.0	Injected 10 A. M.; toxic serum; dose 1: 1155.
25				0.036			Vomitus mixed with urine.
26	8.78	7.58 86.3	0.365 4.1	0.018 0.20	0.345 4.0	0.472 5.4	Injected 10 A. M.; toxic serum; dose 1: 600.
27	9.11	6.80 (?) 76.4	0.551 6.0	0.018 0.20	0.349 3.8	1.392 (?) 13.6	Vomited. Hburia.
28	11.12	9.24 83.1	0.418 3.8	0.130 1.17			Vomiting; refused food.
Mar. 1				0.083			Died.

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

noticed at times, but this was slight at the best and in no way corresponds to the increase which occurs after the administration of phosphorus, phlorhizin and large quantities of meat. In these latter instances Mendel and Jackson¹¹ showed that the increased kynurenic acid output was associated with augmented endogenous or exogenous destruction of proteid material containing the tyrosin nucleus.

As has already been stated, we believe that the effect of the blood changes produced by the serum is directed almost entirely upon the liver and represents a single attack upon this organ. Two coincident conditions, which however do not affect the results in any manner, require perhaps a brief notice. In the first place vomiting usually occurs and persists for a short time, five to ten minutes, after the injection. The feeding and injection were so arranged that nothing was lost in this manner and

¹¹ Mendel, L. B. and Jackson, H. C., On the Excretion of Kynurenic Acid, *Amer. Jour. of Physiol.*, 1898, ii, 1.

TABLE VII.
(Dog 49, Focal Necroses.)

Date.	Total Nitrogen.	Urea.*	Ammonia.	Uric Acid.	Creatinin.	Undetermined Nitrogen.	Notes.
Feb. 22	5.24	4.33	0.366	0.021	0.215	0.308	
		82.6	7.0	0.40	4.1	5.9	
23	5.48	lost	0.320	0.018	0.218		
			5.9	9.33	4.0		
24	5.46	4.41	0.345	0.021	0.208	0.476	Injected 10 A. M.; normal serum; dose 1:600.
		80.8	6.3	0.38	3.8	8.7	Vomit mixed with urine.
25				0.018			
26	5.25	4.34	0.297	0.021	0.194	0.398	Trace albumin.
		82.7	5.7	0.40	3.7	7.5	Injected 10 A. M.;
27	5.63	4.77	0.320	0.022	0.204	0.314	toxic serum; dose 1:628. Vomited.
		84.8	5.7	0.39	3.6	5.5	Hburia.
28	7.07	6.07	0.245	0.014	0.189	0.452	
		85.6	3.5	0.20	2.7	8.9	
Mar. 1	9.14	7.56	0.270	0.029	0.225	1.056	Hburia.
		82.7	2.8	0.32	2.5	11.7	
2	8.45	6.98	0.428	0.017	0.221	0.804	Hburia.
		82.6	5.1	0.20	2.6	9.5	
3	6.97	6.04	0.370	0.022	0.214	0.324	Hburia.
		86.6	5.3	0.31	3.1	4.7	
4	5.70	4.92	0.366	0.020	0.196	0.198	
		86.3	6.4	0.35	3.4	3.6	Hburia. Killed.

* Figures in upper left-hand corner represent grams nitrogen; those in lower right-hand corner, percentage of total nitrogen.

as the vomiting also occurred when normal serum was used, with no apparent effect on the metabolism, we believe this factor may be disregarded. It has occasionally, however, caused the loss, on account of admixture of vomitus, of a day's urine.

In the second place hemoglobinuria, sometimes but not always, makes its appearance after twenty-four hours. This condition, however, could not have produced the changes in the general metabolism which we have described since in two of the experiments (43 and 45), where no hemoglobin or bile appeared in the urine, the results were the same as in those showing a well-marked hemoglobinuria. This agrees with the observations of Samuely¹² who found in experimental anemia, produced by means of pyrocin, that the appearance of hemoglobin or bile in the urine stood in no direct relationship to the changes which took place during the anemia. On the other hand, Andrea¹³ in a series of experiments, in which various hemolytic substances

¹² Samuely, F., Stoffwechseluntersuchungen bei experimenteller Anämie, *Deut. Arch. f. klin. Med.*, 1907, lxxxix, 220.

¹³ Andrea, P., Influenza della sostanza emolitica sulle funzioni ureogenetica ed antitossica del fegato, *Arch. Int. de Pharmacodyn. et de Therapie*, 1905, xiv, 389.

(phenylhydrazin, pyrogallol, p-phenylendiamin, glycerin) were administered to rabbits, has found an increase of urea after the initial injection, but a decrease of one-third after subsequent injections. The increase he explains by destruction of hemoglobin and the decrease as due to impaired hepatic function.

Another possibility, however, must also be considered. This is that the temporary anemia which is simultaneously produced as the result of the primary action of the serum on the red cells may originate changes in oxidization capable of accounting for some of the results. If the anemia were general in character and of the type which occasions a great diminished oxidative power throughout the body, such as is noticed after carbon monoxide poisoning, then we should expect to find, among other disturbances, the elimination of incompletely oxidized products of catabolism, such as lactic acid. We have searched for the appearance of this substance in the urines of five of the animals showing necrosis, but have failed to find it. This, with other facts, appear to justify the exclusion of the factor of diminished oxidation.

In this connection it is of considerable interest to note also that in the type of anemia produced by Samuely the power of the body to oxidize aromatic compounds, such as phenylalanin and cystein, was somewhat decreased, but that the metabolism in regard to the fatty amino-acids was absolutely unchanged.

Upon the whole, therefore, it seems justifiable to designate, as the main causative factor in the production of the results obtained, the necrotic lesions more or less diffusely disturbed throughout the liver.

Several attempts have been made to study the influence of hepatic necrosis upon the metabolism. Jacoby¹⁴ was the first to study the effect of tying off the vessels supplying certain lobes of the liver. Unfortunately the animals did not survive the operation a sufficient length of time to allow observations upon the urine and he was compelled to content himself with demonstrating that products of autolysis were present in the lobes shut off from the circulation. Doyon and Dufourt¹⁵ report

¹⁴ Jacoby, M., Ueber die fermentative Eiweisspaltung und Ammoniakbildung in der Leber, *Zeit. f. physiol. Chem.*, 1900, xxx, 149.

¹⁵ Doyon, M. and Dufourt, L., Contribution à l'étude de la fonction ureopoiétique du foie; Effets de la ligature de l'artère hépatique et de celle de la veine porte (*Arch. de physiol. normal et path.*, 1898, S. 5, x, 522), Ref. in *Maly's Jahresbericht f. Thierchemie*, 1898, xxviii, 382.

that upon tying off the hepatic artery they obtained a diminished formation of urea and increase in ammonia. Their results were somewhat unsatisfactory, however.

From the clinical side of the question quite recently a considerable amount of data which bears upon the question at hand has accumulated. Many investigators have studied the urinary changes occurring in certain metabolic disorders associated with hepatic diseases. Thus Schittenhelm¹⁶ reports that in chronic diseases of the liver the ammonia output in relation to the total nitrogen elimination is increased. Axisa¹⁷ states that in liver abscesses the same change is associated with a marked decrease in the urea percentage. Ingelrans and Dehons¹⁸ corroborate these findings in hepatic insufficiency and claim that cirrhosis gives the same pictures as acute yellow atrophy. De Rossi,¹⁹ on the other hand, offers evidence that not all diseases in which lesions of the liver are present show this altered relation of urea to ammonia elimination and concludes that the liver is not the only seat of the formation of urea.

In regard to acute yellow atrophy, vomiting of pregnancy, eclampsia, delayed chloroform poisoning and phosphorus poisoning, recent investigations seem to show that the hepatic lesions, which are found to be present at autopsy in these conditions, are an important causative factor in the disturbance of metabolism. This disturbance shows itself in the urine by a marked diminution in the output of urea and an increase of the ammonia in relation to the total nitrogen elimination. Williams²⁰ assumes that the urinary picture of pernicious vomiting of pregnancy with its high percentage ammonia output is sufficiently definite to render it a valuable aid in determining the question of inducing labor. On the other hand, he contends that in the condition known as eclampsia there is a diminution in the total nitrogen and percentage urea with no very pronounced ammonia

¹⁶ Schittenhelm, A., Zur Frage der Ammoniakausscheidung im menschlichen Urin, *Deut. Arch. f. klin. Med.*, 1903, lxxvii, 517.

¹⁷ Axisa, E., Ueber Harnstoff und Ammoniakausscheidung im Harn bei Leberabszess, *Zent. f. innere Med.*, 1905, xxvi, 929.

¹⁸ Ingelrans, L., and Dehons, M., La valeur clinique de quelques signes urinaires considérés comme révélateurs de l'insuffisance hépatique, *Arch. de med. exper. et d'anat. path.*, 1903, xv, 188.

¹⁹ De Rossi, S., Sul valore semeiologico dell'urea et dell'ammonia nelle lesioni epatiche, *Riforma Medica*, 1904, xx, 1177.

²⁰ Williams, J. W., Pernicious Vomiting of Pregnancy, *Surgery, Gynecology and Obstetrics*, 1905, i, 41; *Johns Hopkins Hospital Bul.*, 1906, xvii, 71; *Amer. Jour. Med. Sciences*, 1906, cxxxii, 132.

variation. Stone²¹ believes that the vomiting of pregnancy is the result of a toxemia, the lesions of which are primarily an acute degeneration of the liver amounting sometimes to necrosis and resembling in the fatal cases those of acute yellow atrophy. Zweifel's²² researches confirm the opinion that the causative factor in eclampsia is a diminished oxidation which shows itself in the production and elimination of considerable quantities of p-lactic acid. The increased ammonia output is the result of the neutralization of the excess of acids produced and the diminished urea is due to the removal of quantities of ammonia which normally should be synthesized into urea.

Ewing and Wolf²³ report observations made upon pregnant women from the results of which they conclude that the various conditions of eclampsia, vomiting of pregnancy and yellow atrophy are but different degrees or manifestations of the same disordered process which probably centers itself in the hepatic cells and leads to the deranged elimination of urea and ammonia. A similar disturbance of metabolism associated with necrosis of the liver, has been found by Bevan and Favill²⁴ in fatal chloroform poisoning.

In view of all this it can readily be seen that the concensus of opinion favors the idea that the changes in the percentage elimination of urea and ammonia which are found to occur in these various conditions are but indications of the same functional lesion which centers itself in the hepatic cell. When necrosis of the liver occurs the cells which ordinarily synthesize ammonia into urea are out of function and the ammonia elimination is increased and the urea correspondingly falls.

With a full appreciation of the necessity of caution in transcribing deductions from the results of animal experiments to the explanation of pathological variations in the human organism, we feel that our results render somewhat doubtful the relationship between the hepatic necrosis of the vomiting

²¹ Stone, W. S., *The Toxæmia of Pregnancy*, *Amer. Gynecology*, 1903, iii, 518; *Some Further Notes on the Toxæmia of Pregnancy*, *Med. Record*, 1905, lxxviii, 295.

²² Zweifel, *Zur Aufklärung der Eklampsie*, *Arch. f. Gyn.*, 1905, lxxvi, 537.

²³ Ewing, J. and Wolf, C. G. L., *The Clinical Significance of the Urinary Nitrogen*, II. *The Metabolism in the Toxæmia of Pregnancy*, *Amer. Jour. of Obstetrics*, 1907, lv, 289.

²⁴ Bevan, A. D., and Favill, H. B., *Acid Intoxication and Late Poisonous Effects of Anæsthetics*, *Jour. Amer. Med. Assoc.*, 1905, xlv, 691.

of pregnancy, for example, and the urinary finding of a high percentage ammonia output. Wolf²⁵ has already justly criticized the conclusions of Williams in this regard and emphasizes the well-known fact that equally high percentages of ammonia are to be found when for any reason, as in inanition, the nitrogen or the calorific value of the diet becomes insufficient for the replacement of the wear and tear of the cell.²⁶ Schittenhelm has shown the influence of diet in this connection by experiments in chronic hepatic diseases where a high ammonia output is present. He noticed that upon increasing the fat of the diet a still further increase in the elimination of ammonia occurred and believes that the ammonia offers simply an indication of the lack of normal oxidation or catabolism of the ingested fatty acids. An examination of the results presented by Williams makes it seem very plausible that the diet in his cases is not an unimportant factor in the results. The figures for the total nitrogen indicate that the patients were practically in a state of diminished nutrition even approaching inanition since the amounts fall anywhere between four to eight grams per day, and more important still, the higher the total nitrogen the lower the ammonia and *vice versa* regardless of the severity of the condition. This same criticism can also be applied to the results of Ewing and Wolf. The daily total nitrogen elimination in their experiments is quite as low as that found by Williams, hence the high ammonia can be equally well attributed in part at least, to similar causes.

The factor of low and insufficient diet was excluded in our experiments since the animals were upon exact equilibrium. We did obtain, however, severe hepatic lesions consisting of localized or diffuse necrotic areas and the ammonia output of our animals never showed more than the merest increase which was exceedingly transient. At this place emphasis must be laid upon the one experiment in which results comparable to, if not as pronounced as those of Williams and of Ewing and Wolf, were obtained. In this instance (see Table II.), however, the histological findings indicated that we were

²⁵ Wolf, C. G. L., *The Chemistry of Toxæmias in Pregnancy*, *New York Med. Jour.*, 1906, lxxxiii, 813.

²⁶ Folin, O., *Laws Governing the Chemical Composition of Urine*, *Amer. Jour. of Physiol.*, 1905, xiii, 66.

dealing not with a lesion of necrotic character but with an extensive and diffuse degeneration.

On account of the loose use of terms in pathology, this would seem to emphasize that a clear-cut differentiation between degeneration and necrosis²⁷ must be made histologically if we are to correlate the results of chemical studies and histological findings. The pathological condition "degeneration" does not imply autolysis which occurs only in necrosis. It is evident that one may occur without the other and therefore that the chemistry of the cell depends on its functional activity as determined by its physical state. As a reasonable explanation of why a difference in metabolism must be expected in the conditions of degeneration as opposed to necrosis we would present the following: In a generalized hepatic degeneration the lesion affects the protoplasm of each and every cell of the whole organ without destruction of the nucleus. This degeneration may set up enzymotic disturbances, secondary in character, which are not connected directly with the actual life processes of the cell and which may readily again return to normal when the abnormal conditions of the cell are removed. Such a differentiation between the actual life processes of the cell and those of a secondary functional character finds best expression in the German words "Baustoffwechsel" and "Betriebsstoffwechsel." When the disturbance of enzymotic equilibrium occurs, if we grant for the sake of argument the unproven hypothesis that the urea formation is the result of enzymotic relations, there would take place an interference in the production of urea from ammonium compounds without an increase in the output of total nitrogen. A simple rearrangement in the partition factors would evidence itself according to which the ammonia would increase as the urea correspondingly diminished. This is exactly the condition found in our experiment with diffuse degeneration.

On the other hand, in necrosis, the individual cell is destroyed and all its functions cease. Autolysis begins in the same way as it does when death supervenes as the result of the removal of the cell from the body. Under such circumstances there occurs a true protoplasmic decomposition from

²⁷ See first paper of this series, "The Hexon Bases."

which the cell can never recuperate. Here the nucleus becomes involved as is shown by the histological picture and in the urine by the occurrence of a marked increase in the elimination of uric acid, purin bases²⁸ and phosphorus.

In necrosis, moreover, although many individual cells are dead and have ceased to functionate, there always remain, unless the whole organ becomes necrotic, in contradistinction to the condition of degeneration, many normal cells, ready and capable of assuming in a vicarious manner the function of those already dead. This "factor of safety" in the liver is well demonstrated by the partial extirpation experiments of Ponfick, while the power of other organs to assume the urea-forming function is shown by the numerous Eck fistula experiments.

In necrosis, therefore, all that is expected as a urinary finding is the appearance of an increase in the total nitrogen output and of the abnormal products of autolysis such as proteoses, polypeptids and amino-acids; and even these latter, in scattered focal necrosis, need not necessarily appear since as very little liver tissue is destroyed the remaining normal cells still possess the power of splitting these substances, formed by cellular digestion, just as they do similar products of intestinal digestion brought to them by the portal²⁹ vein.

Our results substantiate this theoretical expectation. In the experiments with diffuse necrosis a marked and continued augmentation in the total nitrogen and urea elimination occurred as the result of the removal of the products of autolysis. The diminution in the ammonia output may be ascribed naturally to the increase in the proteid catabolism. Finally the increase in undetermined nitrogen is not definitely to be ascribed to the amino-acids ordinarily considered in this connection since we have not found leucin and tyrosin in the urine in amounts which would compare with those found in acute yellow atrophy.³⁰ It is to be considered rather as in

²⁸ For a detailed discussion of this subject see fourth paper of this series, "Nuclein Metabolism."

²⁹ Freund, E. and Töpfer, G., Ueber den Abbau des Nahrungseiwisses in der Leber, *Zeit. f. exp. Path.*, 1906, iii, 632.

³⁰ Riess, L., Phosphorvergiftung und Leberatrophie, *Berl. klin. Woch.*, 1905, xlii (Ewald Festnummer 44 a, 54).

the "colloidal" form as described by Salkowski and Mancini.³¹

SUMMARY.

1. In focal and diffuse necroses of the liver due to hemotoxic sera there occurs an increased elimination of total nitrogen with a corresponding augmented output of urea. The ammonia excretion becomes slightly diminished at first, but later rises somewhat above normal. The undetermined nitrogen is markedly increased.

2. In diffuse degeneration with no necrosis on the other hand only a slightly increased output of total nitrogen is evident. A rearrangement of the urea-ammonia proportion occurs in that the ammonia excretion is augmented while the urea elimination is correspondingly diminished. The undetermined nitrogen rises but little.

3. In control experiments with normal serum no effect is produced.

4. These results would appear to indicate that in lesions characterized by uniform degeneration of the liver parenchyma, in contradistinction to necrosis, there occurs no increased nitrogen elimination but merely a disturbance of the urea-forming function of the cell without the appearance in the urine of products of autolysis. On the other hand in necrosis, of even considerable extent, the total-nitrogen is greatly augmented, as is also the rest-nitrogen; while the production of urea, on account of the persistence of normally functioning liver cells, remains relatively unchanged.

This "factor of safety"³² possessed by the liver is, we think, one of the most important results brought out in this investigation and must be given great weight in any consideration of the chemistry of hepatic disturbances.

³¹ Mancini, S., Studi un nuovo segno per la diagnosi di insufficienza epatica; Contributo allo studio dell'azeta colloidale nelle urine normali e patologiche, (*Arch. di farmacol. speriment.*, 1906) Ref. in *Biochem. Cent.*, 1906, v, 549.

³² Meltzer, S. J., The Factors of Safety in Animal Structure and Animal Economy, *Jour. of Amer. Med. Assoc.*, 1907, xlviii, 655.

EXPERIMENTAL LIVER NECROSIS; IV. NUCLEIN METABOLISM.¹

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The experiments here detailed were undertaken for the purpose of determining the process or processes intimately concerned in the increased elimination of uric acid which, as has been shown elsewhere,² accompanies the augmented output of total nitrogen when hemotoxic serum is injected. The fact that the principal lesion produced by the toxic serum is in the liver lends peculiar interest to the problem, in view of the important part which this organ is supposed to play in the formation of endogenous uric acid. The direct object of the experiments was to determine whether the increased elimination of uric acid in dogs under these conditions was the result of the breaking down of nuclear material during the necrosis which follows the injection, or whether it signified simply a diminished oxidative power on the part of the hepatic cell by which the uric acid normally oxidized to simple complexes is eliminated unchanged. Or, more concisely, does an actual increase in the production of uric acid from the nucleic acid of the decomposed nuclei cell occur or is there a simple rearrangement of enzymotic equilibrium by which less uric acid is decomposed than normally.

Schittenhelm³ has isolated two enzymes from the spleen and liver, one of which causes a hydrolytic splitting off of the amino group of guanin and adenin transforming these bodies thereby into xanthin³ and hypoxanthin respectively; the other an oxydase, xantho-oxidase (Jones), oxidizes the latter compounds into uric acid. Since adenin, guanin, xan-

¹ Conducted under grants from the Rockefeller Institute for Medical Research. Published also in *Journal of Experimental Medicine*, 1907, ix, 569.

² See third paper of this series "Nitrogenous Metabolism."

³ Schittenhelm, A., Ueber die Harnsäurebildung in Gewebsauszügen, *Zeit. f. physiol. Chem.*, 1904, xlii, 251; Ueber die Harnsäurebildung und die Harnsäurezersetzung in dem Auszügen der Rinderorgane, *ibid.*, 1905, xlv, 121.

thin and hypoxanthin are found in varying amounts in the different nucleic acids which give character to the nucleoproteid of the nucleus we have a fairly definite process by which uric acid results, it may be assumed, from the decomposition of the nucleus by means of autolytic enzymes aided perhaps by a special oxydase.

On the other hand, however, the fact has long been known that various tissues are capable of decomposing uric acid. Wiener,⁴ Schittenhelm⁵ and Almagia⁶ have recently studied the question in detail and describe the presence of uricolytic enzymes in various tissues of several animals. Schittenhelm claims that the calf's kidney is most active in this regard with the liver of the same animal second in power. Pfeiffer⁷ was able to prove that ninety to ninety-five per cent. of the uric acid added to human kidneys suffered decomposition. In the horse Almagia found the most active enzyme to be in the liver. These results indicate that the liver among other organs possesses the power of forming uric acid by oxidization and perhaps also by synthesis,⁸ while at the same time it is capable of decomposing it through the stages of allantoin and glyoxylic acid.

Austin⁹ has raised the point, however, that the alkali in which the uric acid is dissolved is capable of splitting up the latter and that all preparations of uricolytic enzymes contain purin bases which readily become transformed into uric acid. Notwithstanding the latter criticism it seems fairly well founded that the reaction under discussion is a reversible one in which synthetic and analytic processes come into a state of equilibrium in the cell and that alterations in the

⁴ Wiener, H., Ueber Zersetzung und Bildung der Harnsäure im Thierkörper, *Arch. f. exper. Path. u. Pharm.*, 1899, xlii, 375.

⁵ Schittenhelm, A., Ueber das uricolytische Ferment, *Zeit. f. physiol. Chem.*, 1905, xlv, 161.

⁶ Almagia, M., Zur Lehre vom Harnsäurestoffwechsel, Ueber die Zersetzung der Harnsäure durch die Organe des Säugetheirs, *Beit. z. chem. Phys. u. Path.*, 1905, vii, 459.

⁷ Pfeiffer, W., Zur Lehre vom Harnsäurestoffwechsel, Ueber die Zersetzung der Harnsäure durch menschliche Nierengewebe, *Beiträge z. chem. Phys. u. Path.*, 1905, vii, 463.

⁸ Burian, R., Ueber die oxydative und die vermeintliche synthetische Bildung von Harnsäure im Rinderleber Auszug, *Zeit. f. physiol. Chem.*, 1905, xliii, 497; Die Herkunft der endogenen Harnpurine bei Mensch und Säugethier, *ibid.*, 1905, xliii, 532.

⁹ Austin, A. E., The Uricolytic Enzyme in Animal Organs, *Jour. of Med. Research*, 1906, xv, 309. The Uricolytic Enzyme, *ibid.*, 1907, xvi, 7.

activity of one or the other set of enzymes increase or diminish the elimination of uric acid without the occurrence, necessarily, of an increase or decrease in the amount of purin material formed from the nucleic acid of the nucleus.

If the increased elimination of uric acid in dogs injected with toxic sera is the result of altered uric acid equilibrium of the cell, as just described, one would expect to find that, as more xanthin and hypoxanthin are oxidized to uric acid, less of these purins should be eliminated in the urine. On the other hand, if the uric acid is the result of a new formation from the nucleic acids then an increase in purins also would be expected and at the same time an augmentation in elimination of phosphoric acid in some form¹⁰ as the result of the splitting of the nucleic acid molecule. In the formation of uric acid by the first process no change in phosphoric metabolism should take place.

Methods.—The experiments presented in Tables I, II and III were carried out in the following manner: The animals were placed upon nitrogenous equilibrium after which estimations were made during a three day fore period. An injection was then given, and in two instances a second injection after a lapse of one and three days respectively. The observations were continued until after the maximum effect was reached. The purin-free diet was a casein, cracker dust and lard mixture. The urine was examined for total-nitrogen by the Kjeldahl-Gunning method, the uric acid and purin bases were determined by the Salkowski procedure, and the inorganic phosphates by titration with uranium nitrate, using potassium ferrocyanide as an indicator. The method used for total phosphorus was fusion of the evaporated residue of the urine with sodium hydroxide and potassium nitrate, precipitation with ammonium molybdate in the presence of ammonium nitrate, solution of the ammonio-phosphomolybdate in ammonia and re-precipitation with magnesium mixture. This precipitate was filtered off, incinerated and weighed as magnesium pyrophosphate.

The question of the presence of phosphorus in the urine in organic form has recently received attention from various in-

¹⁰ Jackson, H. C. and Blackfan, K. D., Action of Certain Drugs on the Elimination of Uric Acid During a Nitrogen-free Diet, ALBANY MEDICAL ANNALS, 1907, xviii, 24.

investigators among whom Bergmann¹¹ and LeClerc and Cook¹² incline to the opinion that all of the phosphorus of the urine exists in the inorganic form. The latter observers studied the phosphorus content of the urine by means of determinations made by Neumann's¹³ method, and by that outlined above, and compared the results with those obtained by the uranium-titration procedure. They show that the results by the dry fusion method are uniformly higher by three to four per cent. than those given either by uranium acetate or by Neumann's method; hence they incline to the view that this difference is within the limits of error and that no organic phosphorus is present in normal urine.

We cannot agree with these conclusions in view of the results obtained by one of us in a study of the elimination of organic phosphorus after the administration of sodium salicylate.¹⁴ Nor do they receive support from the results which are presented in this communication. The constant uniformity of difference shown by the fusion method over that of titration seems to indicate that the difference is not due to the factor of error in the method. We have performed in this connection some preliminary experiments with a view to explaining the differences reported and expect to continue them more in detail. At present we can say that Neumann's method apparently yields results which agree closely with those obtained by titration with uranium nitrate, using potassium ferrocyanide as indicator. When the fusion method is employed the figures obtained are uniformly higher than by both of the other methods. At present, therefore, we incline to the opinion that phosphorus in other than inorganic form is present in normal urine.

¹¹ Bergmann, W., Ueber die Ausscheidung der Phosphorsäure beim Fleisch und Pflanzenfresser, *Arch. f. exper. Path. u. Pharm.*, 1901, xlvii, 77.

¹² LeClerc, J. A., and Cook, F. C., Metabolism Experiments with Organic and Inorganic Phosphorus, *Jour. of Biol. Chem.*, 1906, ii, 203.

¹³ Neumann, A., Einfache Veraschungsmethode (Säuregemisch-Veraschung), *Zeit. f. physiol. Chem.*, 1902, xxxvii, 115.

¹⁴ Jackson, H. C. and Blackfan, K. D., Action of Certain Drugs on the Elimination of Uric Acid During a Nitrogen-free Diet, *ALBANY MEDICAL ANNALS*, 1907, xviii, 24.

TABLE I.
Nuclein Metabolism. Dog 59.

DATE.	GRAMS NITROGEN AS			GRAMS P ₂ O ₅ .		Notes.
	Total.	Uric Acid.	Purin Bases.	Inorganic.	Organic.	
Apr. 10	7.86	0.0015	0.001	0.899	0.147	Injection 10 A. M. toxic serum; dose 1: 785.
11	5.51	0.0159	Lost	0.652	0.093	
12	4.70	0.0141	0.0082	0.690	0.087	
13	4.49	0.0121	0.0097	0.576	0.050	
14	6.97	0.0126	0.0231	1.009	0.085	
15	12.50	0.0246	0.0169	0.690	0.121	Injection 11 A. M. toxic serum; dose 1: 1745.
16	11.08	0.0127	Lost	0.848	0.072	Hburia.
17	13.81	0.0319	0.0287	0.629	0.083	Killed.
18	11.93	0.0203	0.0265	0.866	0.023	

TABLE II.
Nuclein Metabolism. Dog 61.

DATE.	GRAMS NITROGEN AS			GRAMS P ₂ O ₅ .		Notes.
	Total.	Uric Acid.	Purin Bases.	Inorganic.	Organic.	
Apr. 22	3.33	0.0042	0.0086	0.478	0.078	Injected 12 M. toxic serum; dose 1:937; vomited.
23	3.83	0.0063	0.0072	0.554	0.052	
24	3.12	0.0050	0.0079	0.584	0.097	
25	4.57	0.0167	0.0103	0.549	0.085	
26	5.74	0.0336	0.0107	0.387	0.074	
27	6.83	0.0241	0.0124	0.387	0.084	Hburia.
28	6.54	0.0200	0.0235	0.326	0.046	Killed.
29	5.69	0.0112	0.0086	0.356	0.118	

TABLE III.
Nuclein Metabolism. Dog 63.

DATE.	GRAMS NITROGEN AS			GRAMS P ₂ O ₅ .		Notes.
	Total.	Uric Acid.	Purin Bases.	Inorganic.	Organic.	
May 14	4.74	0.0057	0.0061	0.520	0.062	Injected 11 A. M. toxic serum; dose 1:835; vomited.
15	4.41	0.0054	0.0068	0.557	0.109	
16	4.26	0.0068	0.0076	0.550	0.072	
17	5.29	0.0249	0.0110	0.641	0.062	
18	4.24	0.0143	0.0088	0.508	0.078	
19	4.34	0.0109	Lost	0.535	0.066	Injected 11 A. M. toxic serum; dose 1:557; vomited.
20	4.75	0.0133	0.0181	0.576	0.066	Hburia.
21	7.64	0.0141	0.0116	0.435	0.090	Hburia.
22	8.38	0.0095	0.0187	0.440	0.075	Hburia.
23	6.21	Lost	0.0133	0.550	0.111	Killed.

Results.—From the figures in the above table it is evident that the increase of uric acid after injection, as noted in the study of the nitrogenous metabolism,¹⁵ is constant and that there also occurs an increase of purin bases and with one exception of phosphorus pentoxide. This general increase occurs not only after the first but also after subsequent injections. It reaches its maximum on the second day and then falls away. The uric acid increase is greater proportionately than that of the total nitrogen, hence an augmentation of the percentage uric acid in terms of total-nitrogen takes place. The uric acid nitrogen, however, returns to the normal sooner than the latter. The same facts hold true for the purin bases the elimination of which runs parallel, in a general way, to the uric acid output. In the one instance (Table II, Dog 61) in which the phosphorus pentoxide elimination remained constant there still occurred the markedly increased uric acid and purin base output. That the phosphorus pentoxide elimination did not follow that of the uric acid and purin bases is to be explained by the fact that after the injection the animal ate only a quarter of the daily food allowance. Although on the day following the injection the amount ingested of phosphorus pentoxide was therefore diminished, the elimination of inorganic phosphates remained unchanged. This would indicate that an actual increase in endogenous phosphorus pentoxide formation took place, thus bringing the apparent exception in agreement with our other observations. The organic phosphorus elimination was unaltered.

The question as to the cause of the increased output of uric acid during a purin-free diet, observed after various experimental procedures, has been variously explained. Beebe¹⁶ concludes that the increase found after alcohol administration is to be attributed to a diminished oxidative power on the part of the hepatic cells although the purin bases were likewise increased. In commenting upon this view Jackson and Blackfan, from results which they obtained with alcohol, inclined to the opinion that the facts would warrant rather the assumption that the alcohol causes an increased new formation of uric acid and

¹⁵ See third paper of this series "Nitrogenous Metabolism."

¹⁶ Beebe, S. P., The Effect of Alcohol and Alcoholic Fluids upon the Excretion of Uric Acid in Man, *Amer. Jour. of Physiol.*, 1904, xii, 13.

purin bases, and they adduced as evidence, among other factors, the augmented excretion of organic phosphorus.

According to the view of Schittenhelm, concerning the probable way in which the uric acid is formed from the nucleo-proteid, we would expect, if for any cause oxidation in the hepatic cell is diminished, the xantho-oxydase would be affected, and as a result less uric acid would be formed from the purin bases than under normal circumstances. An increase in purins would also occur if the hydrolytic splitting enzymes were unaffected. An augmentation of uric acid would take place either as the result of a diminished power of the uricolytic enzymes or as the result of an increased new production, other things being equal. In the latter case the purin would also be increased.

The results reported in the paper on nitrogenous metabolism do not indicate that the injection of a hemotoxic serum causes a prolonged or decided decrease in the oxidative power of the hepatic cell. As a whole the organ continues to perform its functions in the normal way. We must therefore explain the increase in purins and uric acid as a decomposition of nuclear material in the autolysis occurring in the areas of necrosis. This is brought about by the hydrolysis of the nucleic acids. Such an explanation agrees with the feeding experiments performed by Sweet and Levene¹⁷ upon a dog with an Eck fistula. They found the ingestion of nucleic acids to be followed by a rise in uric acid and total phosphorus elimination. The fact that the increased excretion of these nuclear compounds usually reaches its maximum in our experiments on the second day, when the autolysis is at its height, would also strengthen this explanation.

The increased elimination of inorganic phosphates which accompanies the output of uric acid would likewise point to the new formation of the latter from the nucleic acids formed as a step in the autolysis of nuclear material. The phosphoric acid radical of these acids is evidently excreted in inorganic form and thus the mechanism differs from that observed in connection with the administration of alcohol and salicylic acid under which circumstances the phosphoric acid is apparently eliminated in organic combination, since no increase in inorganic phosphates occurs.

¹⁷ Sweet, J. E., and Levene, P. A., Nuclein Metabolism in a Dog with Eck's Fistula, *Jour. of Exper. Med.*, 1907, ix, 229.

Allatoïn.—In the dog, the largest part of the quantity of uric acid, ingested, as shown by Swain,¹⁸ disappears and is not excreted. In the experiments outlined above it is not improbable, therefore, that a much larger amount of uric acid was produced in the necrosis of the cell nucleus than was eliminated. Of the total amount formed only a small proportion escapes hydrolysis and appears in the urine. Swain also has shown that the ingestion of large amounts of uric acid is followed by the elimination of small quantities of allantoïn.

In order to obtain evidence upon this point the urine of the six animals under observation in the experiments reported in the paper on nitrogenous metabolism, was examined for allantoïn according to the method of Loewi.¹⁹ The results are not uniform but indicate that usually the increase of uric acid is accompanied by an increase in allantoïn; for example, in one the amount of uric acid the day before injection was 0.018 gram and of allantoïn 0.319; in the urine of the twenty-four hour period following the former rose to 0.337 and the latter to 0.669.

CONCLUSIONS.

In necrosis of the liver of the dog produced by hemotoxic immune sera, the increased excretion of uric acid, purin bases and inorganic phosphorus pentoxide is the result of the hydrolysis of nuclear material occurring during the autolysis of the necrotic tissue.

¹⁸ Swain, R. E., Formation of Allantoin from Uric Acid, *Amer. Jour. of Physiol.*, 1901, vi, 38.

¹⁹ Loewi, O., Beiträge zur Kenntnis des Nucleinstoffwechsels, *Arch. f. exp. Path. u. Pharm.*, 1900, xliv, 20.

EXPERIMENTAL LIVER NECROSIS. V. THE FATS
AND LIPOIDS.¹

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The results outlined in this communication constitute a partial report of a somewhat comprehensive investigation² now in progress of the chemical processes concerned in the variations occurring in the amounts of fats and lipoids in the hepatic cell under normal and various pathological conditions.

It has seemed advisable, in connection with the other investigations of liver necrosis here presented, to discuss at this time only that part of the general study which deals with the fatty changes in hepatic necrosis brought about by the injection of hemotoxic immune serum.

The study of such lesions is of peculiar value in view of the attempts which have been made to bring into a relation of cause and effect the autolysis of the organ and the appearance of the fat. We have, therefore, with this point in view attempted to determine whether in the necrosis (autolysis) which follows the injection of the serum there occurs any alteration in the fat content corresponding to changes observed in the nitrogenous constituents of the cell. Especial interest is attached to this question in view of the somewhat widely divergent opinions held as to the origin of the fat which appears in the so-called fatty transformation of various organs. That the fat does not arise from a peculiar decomposition of the proteid molecule in the cell, the fatty degeneration of Virchow, seems fairly well established. On the other hand, Rosenfeld³ and others hold that the fat makes

¹ Conducted under grants from the Rockefeller Institute for Medical Research. Published also in *Journal of Experimental Medicine*, 1907, ix, 578.

² This investigation, including a study of the fatty changes occurring in various experimental lesions of the liver of the dog and of certain pathological conditions of the human liver, will be published later in full by H. C. Jackson and L. K. Baldauf. We wish to express here our indebtedness to Dr. Baldauf for the privilege of utilizing in this partial report that portion of his work which refers to necroses of the liver produced by hemotoxic serum.

³ Rosenfeld, G., Fetbildung, *Ergebnisse der Physiologie*, 1902, i, 651; *ibid.*, 1903, ii, 50.

its appearance as a simple infiltration from without when for any reason the cell has received an injury which seems to inhibit its oxidizing power. The appearance of fat in organs during phlorhizin poisoning is thus explained by Lusk.⁴ Waldvogel,⁵ however, who has investigated this question most thoroughly believes that the process is one closely allied to autolysis. His theory is that normally certain substances, which may be called combined fats, such as the ovovitellin of Hoppe-Seyler, or the lecithalbumin of Liebermann, hold the fatty radical in a combination which does not react to microchemical fat stains, such as Scharlach R or Sudan III, and which cannot be removed chemically by the ordinary fat solvents. These substances, however, during autolysis become split in such a manner that the fat radical is liberated in the form of protagon, jecorin, lecithin and even neutral fats. He supports this contention by experiments upon the livers of phosphorus-poisoned animals and upon normal livers undergoing autolysis, in which he has shown there is a marked augmentation during autolysis of such substances as protagon, jecorin, cholesterin, fatty acids and neutral fats. The lecithin, on the other hand, is diminished.

Siebert⁶ has also shown that, although in autolysis the ether extract of the liver does not increase, a marked rearrangement of the fatty compounds of the extract takes place, and that the jecorin rapidly suffers decomposition. This is not in accord with Waldvogel's results. In this connection it may be mentioned that Taylor⁷ has conducted experiments upon normal and phosphorus-poisoned frogs and finds that, although the absolute amount of free fat may not increase after the administration of phosphorus the combined fats estimated after digestion with pepsin-hydrochloric-acid suffer a marked diminution equivalent to two-thirds of the amount originally present.

As stated in previous papers in this series phosphorus poisoning does not seem to set up in the liver processes which are

⁴ Ray, W. E., McDermott, T. S. and Lusk, G., On Metabolism During a Combination of Phosphorus Poisoning and Phlorhizin Diabetes, *Amer. Jour. of Physiol.*, 1900, iii, 139.

⁵ Waldvogel, Autolyse und fettige Degeneration, *Virchow's Arch.* 1904, clxxvii, 1. Phosphorvergiftung und Autolyse, *Deut. Arch. f. klin. Med.*, 1905, lxxxi, 437. Waldvogel and Mette, Die Autolyse in Menschlichen fettigen degenerierten Organen, *Münch. med. Woch.*, 1906, ix, 402. Waldvogel, Die durch Fermente bewirkten Umwandlungen bei der fettigen Degeneration, *Zeit. f. physiol. Chem.*, 1904, xlii, 200.

⁶ Siebert, F., Das Verhalten des Fettes bei der Autolyse der Leber, *Beiträge zur chem. Physiol. u. Path.*, 1902, i, 114.

⁷ Taylor, A. E., On Fatty Degeneration, *Jour. of Med. Research*, 1903, ix, 59.

strictly analogous to autolysis following necrosis, hence the results to be presented must not be considered as strictly comparable to those obtained in other lesions.

Few attempts have been made to study the effect of a true necrosis upon the fat constituents of the cell. Dietrich,⁸ as the result of histological studies, claims that autolysis is not an important factor, since tissues introduced into the peritoneal cavity in collodion sacs do not show fatty change. When the tissue, however, is not enclosed in sacs, fat droplets appear which are present not in the cell substance but in the interstices of the tissue. He also tied off the renal arteries and found a "deposition" of fat around the necrotic areas. He believes, therefore, that fat will not appear if the cell is completely dead as in necrosis; but only when it continues to functionate incompletely, as, for example, must be the case with the cells around necrotic areas.

This opinion we can confirm as the result of the histological study of focal necrosis caused by hemotoxic serum. Frozen sections of formalin-hardened material stained with Scharlach R never show more fat, and usually less, than the surrounding adjacent normal liver tissue. There is always present however, in lesions twenty-four to forty-eight hours old a very definite and striking accumulation of fat in the ring of more or less degenerated cells lying between the necrotic and normal liver. These cells correspond to those which in hematoxylin and eosin preparations present a vacuolated, granular protoplasm and pycnotic, poorly staining, nuclei.⁹

Di Cristina,¹⁰ who conducted experiments somewhat after the nature of those of Dietrich, and made chemical analyses by Rosenfeld's method, states that no increase of fat occurs in the necrosis caused by shutting off completely the renal circulation. Of considerable interest in connection with Dietrich's view are the experiments reported by Bainbridge and Leathes.¹¹ These investigators ligated the hepatic artery alone and thereby obtained an increase in fat but no necrosis.

⁸ Dietrich, A., Experimente zur Frage der fettigen Degeneration, *Münch. med. Woch.*, 1904, li, 1510.

⁹ Pearce, R. M., Regenerative Changes in the Liver: A Study of Experimental Lesions in the Dog, *Jour. of Med. Research*, 1906, xv, 99.

¹⁰ Di Cristina, Die chemischen Veränderungen bei fetter fettigen Degeneration in Beziehung zur den anatomischen, *Virchow's Arch.*, 1905, clxxxi, 509.

¹¹ Bainbridge, F. A. and Leathes, J. B., The Effect of Arterial or Venous Obstruction upon the Nutrition of the Liver Cells, *Biochem. Jour.*, 1906, ii, 25.

The ligation of the portal vein on the other hand resulted in atrophy of the cells and some necrosis, but no augmentation of fat. These experiments appear to confirm the idea that the cells must retain in part their normal function and be normally bathed with the circulating fluids in order to give rise to the appearance of fat within them.

In concluding this brief discussion which merely suffices to indicate the trend of opinion in regard to the subject under investigation it may be said that much of the discrepancy in the results reported can be safely ascribed to the varying methods employed especially in connection with the extraction of the fatty material from the tissue. Siegert has also emphasized the ease with which the extracted products undergo laboratory changes.

Methods.—The organs were removed from the body quickly, put through a hashing machine, weighed, and dried under absolute alcohol at about 70–80° C. At this stage the partially dry material was weighed and then ground in a machine to an impalpable powder. Part of this was further dried in a desiccator to constant weight and upon this was calculated the dry substance and nitrogen content of the original tissue. Another weighed part was extracted in a Soxhlet with alcohol and chloroform successively according to the method of Rosenfeld. Each total extraction with alcohol and with chloroform lasted on an average thirty hours. In some cases the original partly-dried material was so fatty that a rough extraction with chloroform at room temperature preceded the grinding. This extract was added to the subsequent one obtained from the Soxhlet. The total fat was taken up in a definite volume of chloroform. An aliquot portion of this was evaporated to complete dryness at about 70° C. and from this was calculated the fat per cent. of the tissue.¹²

For our purposes it was not thought necessary to keep separate for analysis the alcohol and chloroform extracts as Waldvogel does with alcohol and ether. This procedure is exceedingly time consuming and we have employed another and simpler method which we believe has given results

¹² We have employed chloroform in this connection, since, in the first place, it is a much readier solvent for the fatty compounds than either sulphuric or petroleum ether, and secondly, because all of the ether we could obtain reacted distinctly acid to phenolphthalein, a fact already alluded to by Baldauf, *Chemistry of Atheroma and Calcification (Aorta)*, *Jour. of Med. Research*, 1906, xv, 355.

equally definite. Instead of attempting to decide whether the fat compounds present in the extract underwent any change or rearrangement, such as is described by Waldvogel during autolysis of normal tissues and in phosphorus poisoning, it seemed sufficient to determine the nitrogen and phosphorus pentoxide content of the extract, and from these figures to calculate the relationship of the nitrogen to the phosphorus. Since the molecule of the lecithins contains one nitrogen and one phosphorus atom the relationship $P:N=1:1$; in jecorin, however, this ratio is $1:4$ and in protagon about the same, varying from $1:3.4$ to 4.8 . The latter figure is calculated from the analyses of Dunham.¹³ It is seen, therefore, that the greater the preponderance of substances of the jecorin and protagon type in the extract the higher would be the $P:N$ ratio. On the other hand, if these substances should undergo an autolytic change whereby lecithin and fatty acids were produced, this ratio should fall to the neighborhood of $1:1$. Hence from variations in this ratio, changes in the fatty constituents of the extract should be readily determined.

Measured portions of the chloroform extract were analyzed in duplicate as follows:¹⁴

Total nitrogen by the Kjeldahl-Gunning method; phosphorus pentoxide by the usual fusion procedure and weighing as magnesium pyrophosphate and the iodine equivalent as outlined by the Association of Official Agricultural Chemists.¹⁵ With some exceptions portions of the tissues analyzed were stained with hemotoxylin and with Scharlach R for the purpose of determining roughly in a comparative way the extent of the necrotic lesion and the fat content.

Results.—The table presents the results obtained in the analysis of four dog livers with normal, four to five, per cent. fat content, one apparently normal but very fatty liver with 21.9 per cent., five with focal necrosis and three with diffuse necrosis of varying degree. As can be seen no relation exists between the degree of necrosis and the amount of fat present. The high amount of fatty material which is present in the

¹³ Dunham, E. K., Further Observations on the Phosphorized Fats in Extracts of the Kidney, *Proc. of Soc. for Exper. Biol. and Med.*, 1905, ii, 63.

¹⁴ In most instances the chloroform had to be completely removed before the commencement of the analysis.

¹⁵ U. S. Dept. of Agriculture, 1899, *Bulletin* 46, 50.

TABLE I.
Fats and Lipoids.

TISSUE.			ALCOHOL-CHLOROFORM EXTRACT.					Fat by Scharlach R.	Lesion.			
Experiment.	PER CENT.					PER CENT.						
	Dry Sub- stance.	Dry Sub- stance Fat-free.	Fat.		Nitrogen.	Nitro- gen.	P ₂ O ₅ .			P:N	Iodine EQUIVA- lent.	
			Moist Sub- stance.	Dry Sub- stance.								
								Dry Sub- stance. Fat-free.				
1	25.6	22.6	3.07	15.5	12.7	15.0	—	—	58.3	+	Normal.	
5	28.6	24.1	4.55	15.9	9.7	11.5	1.8	2.6	17.0	60.0	+	Normal.
2	24.5	19.5	4.95	20.2	12.7	15.0	2.5	5.2	14.0	50.6	+	Normal.
4	18.5	13.7	4.75	25.7	9.2	11.3	1.5	3.6	14.4	53.4	+	Normal.
18	40.7	18.8	21.85	53.7	7.5	12.6	0.6	1.3	14.5	47.0	++	Normal (very fatty).
7	20.8	26.7	3.10	10.4	9.3	13.2	3.1	7.3	14.3	67.7	?	Focal necroses.
6	25.3	21.2	4.12	16.3	12.5	16.7	3.4	7.0	13.5	58.3	?	Focal necroses.
26	28.3	24.5	3.84	13.6	9.9	13.8	2.1	5.0	14.3	58.7	+	Extensive focal necroses.
43	41.1	24.9	16.23	39.5	8.3	14.0	0.7	2.0	13.8	47.0	+	Extensive focal necroses.
27	26.0	20.3	5.72	22.0	11.5	15.5	1.5	0.5	12.4	49.3	+	Extensive focal necroses.
21	41.1	14.9	25.15	61.2	6.7	10.5	0.3	1.1	13.0	50.0	++	Diffuse necrosis.
28	23.2	18.8	4.43	10.1	11.0	15.5	2.3	5.8	14.3	50.3	+	Diffuse necrosis.
29	21.9	20.1	4.88	10.5	12.7	16.3	2.3	6.1	14.0	62.3	+	Diffuse necrosis (most marked).

normal liver, extractable by the newer method of Rosenfeld, is at first glance surprising, but is in accord with the results of recent investigators. The fat per cent. of all the necrotic livers falls between the normal limits with the exception of 43 and 21 which are above the normal, but these do not represent the most extensive necrosis. Experiments 28 and 29, with the most diffuse necrosis, show normal amounts of fat.

The point which was emphasized in one of the previous papers¹⁶ concerning the percentage of dry substance in the fatty livers is well shown in the table. Whenever the fat per cent. rose above normal the per cent. of dry substance rose almost proportionately. This relation is readily seen by referring to that column in the table in which is given the per cent. of fat-free dry substance. With two exceptions, the dry substance without fat falls between 18.8 to 26.7 per cent. and this surprisingly small variation is in no definite relation to the amount of fat present. The two exceptions are one with normal and one with high fat content. Waldvogel has claimed that as the fatty autolysis increases the water content of the tissue also rises. We would be inclined to ascribe this rather to the nitrogenous autolysis *in vivo* which as we have pointed out elsewhere¹⁶ tends to diminish the amount of dry substance if the circulation is not too greatly impaired. This is shown clearly in Experiments 27, 21, 28 and 29, with the most pronounced necrosis, in which it is seen that the figures for the dry fat-free substance lie on the lower edge of the variation limit for this factor.

As regards the nitrogen content of the tissues a somewhat similar condition of affairs is evident, and although this point does not come directly into this part of the general subject it is of considerable interest. It will be seen that the per cent. nitrogen of the fat-containing dry substance varies within rather wide limits (6.7 to 12.7 per cent.). In those instances, however, where the fat content is high the nitrogen per cent. is low, as would be expected. If, however, the nitrogen of the fat-free dry substance is considered, it is found that the figures for this factor are surprisingly constant throughout (10.5 to 16.7 per cent.). Some of the lowest and

¹⁶ See first paper of this series, "The Hexon Bases."

highest values occur where, as regards the fat content, the liver tissue was perfectly normal. This indicates apparently that in conditions such as those under discussion, when an increase in fat-content occurs, the material which is represented by the nitrogen of the tissues, suffers no decrease or increase in amount. If then the fat originates from some compound proteid antecedent, the proteid component remains apparently unchanged.

A consideration of the character of the fatty extract obtained from normal and necrotic tissues presents some interesting facts. In regard to the iodine equivalent, which indicates roughly the content of oleic acid in the fat mixture, it is evident that as the fat per cent. increases the iodine absorption factor falls below normal (Experiments 18, 43, 27 and 21). This low iodine factor associated with increased fat content would of course point to a diminishing content of oleic acid radicals as the fat is heaped up in the cell. This again directly opposed to the finding of Waldvogel in phosphorus poisoning.

An examination of the nitrogen and phosphorus pentoxide percentage of the fatty extracts indicates that somewhat wide variations are present, the nitrogen varying from 0.3 to 3.1 and the phosphorus pentoxide from 1.1 to 7.3. It is evident, however, that the lower percentages are in those experiments in which the greatest amount of fat is present (Experiments 18, 43, 27 and 21). With these exceptions the percentage figures are quite regular. Only one explanation can be made of this difference. That is, that as fatty compounds make their appearance in the cell, those substances predominate which do not contain nitrogen or phosphorus, namely the neutral fats, fatty acids and cholesterin.¹⁷

Of particular interest is the ratio of phosphorus to nitrogen discussed above. It is seen from an examination of the figures in the table that this ratio remains remarkably constant regardless of the absolute variation in the figures. The ratio, with the exception of Experiment 5 which is high, varies only from 1:2.4 to 4.9. If we also exclude Experiments 21 and 27 the variation is still further reduced to 1:3.5 to 4.9,

¹⁷ We possess confirmatory evidence upon this point in the results which have been obtained with the saponification equivalent. These will be published in a later paper.

which is well within the limits of error or better perhaps within the calculation error as made from the published figures for nitrogen and phosphorus percentages of such poorly defined substances as protagon and jecorin. This high ratio indicates that the nitrogen- and phosphorus-containing fats present in the extracts are of the protagon and jecorin type and remain so irrespective of the amount of fat appearing in the cell.

It must be admitted that some slight evidence does exist to indicate that perhaps under certain conditions these bodies may undergo autolysis. In the two experiments, for example 21 and 27 with a low ratio (1:2.4 to 3.0), considerable autolysis must have been going on during the extensive necrosis and the low ratio as a concomitant factor would point to the appearance in the extract of bodies such as the lecithins, which as previously stated possess a ratio of 1:1. In these experiments roughly one-third of the nitrogen- and phosphorus-containing fats has been replaced by lecithin, according to this reasoning. We are somewhat sceptical, however, of the validity of this line of argument since it does not agree with Waldvogel's observations; nor is the low ratio present in the two experiments (28 and 29) where one would expect it to be most markedly diminished since the necrosis was most pronounced. In these two instances, however, the ratio is normal. As the low ratio occurs in only two out of the eight experiments in which necrosis was present, we are more inclined to believe that some other factor is the true cause for the change.

SUMMARY.

1. Changes which occur in the fat content of the liver of dogs receiving hemotoxic serum bear no relation to the degree of necrosis produced by this serum.

2. An increase in water content of the tissue seldom occurs, but where present is due to the nitrogenous autolysis rather than to the deposition of fat.

3. The appearance of fat in the cell is not associated with a decomposition of the proteid component of the compound fats, but rather to a simple splitting off of the fatty radical. This is shown by the slight variations occurring in the percentage nitrogen of the fat-free substance.

4. The iodine equivalent diminishes as the fat content increases. This would indicate that in the fatty changes which occur, fats other than those containing oleate radicals make their appearance.

5. The ratio of phosphorus to nitrogen in the alcohol-chloroform extract remains practically constant in all degrees of necrosis. Hence the substances of the protagon and jecorin type hold the same relation to the lecithins during the autolysis as they do normally.

6. In a general way it may be said that the results obtained in the microchemical staining of the fats with Scharlach R agree with those found by chemical extraction methods.

AN INVESTIGATION OF THE NATURE OF PROTEID-SOAP COMPOUNDS AND OF THE STAINING OF PURE FATS AND LIPOIDS BY SCHARLACH R AND SUDAN III.*

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These studies were undertaken for the purpose of further investigating certain reactions on which Klotz¹ bases in a large part his interpretation of pathologic calcification and which, as his interpretation is not in accord with that reached by Wells² and independently by me,³ are matters of considerable importance in the elucidation of this interesting problem.

The observations in question are those concerning the value of the so-called proteid-soap compounds and of the staining of fats and lipoids by Sudan III and Scharlach R.

PROTEID-SOAP COMPOUNDS.

Klotz, as the result of a series of microchemical examinations of various kinds of calcified tissues, concluded that the deposi-

* This investigation was pursued under a grant made by the Committee on Scientific Research of the American Medical Association. Published also in *Journal of the American Medical Association*, 1907, xlix, 642.

¹ Studies on Calcareous Degeneration, I. The Process of Pathological Calcification, *Jour. Exp. Med.*, 1905, vii, 633.

² Pathologic Calcification, *Jour. Med. Research*, 1906, xiv, 491.

³ Chemistry of Atheroma and Calcification (Aorta), *Jour. Med. Research*, 1906, xv, 355.

tion of lime in tissues undergoing calcareous degeneration is dependent on the formation of calcium soaps as an intermediate step. He further states that an essential factor in the production of these soaps is the initial combination of a soluble soap and an albuminous substance. He does not assume, however, that this is the essential process in all varieties of pathologic calcification, but states that in exceptional cases there may be two other possibilities: First, "that under certain conditions the calcium salts act directly on the neutral fats present in the degenerating cells," or, second, "that the neutral fats are first broken down into fatty acids and that these react with the calcium salts to form the soaps."

As he was convinced that the combination of soaps with proteid is a necessary intermediate product in certain forms of calcareous degeneration, he attempted to reproduce the reaction in the test tube. To a weak solution of a soap (sodium stearate, oleate or palmitate), a dilute solution of egg albumen was added. In a half hour or longer, at room temperature, a white flocculent precipitate appeared. This he considered to be a combination of the soap and the egg albumen. When this product was treated with Sudan III the same pinkish color, visible in the "soap" granules in tissues undergoing calcification, was seen to be present. The amount of precipitate, he states, is further increased by the passage of carbon dioxid (CO_2) through the solution. Acid calcium phosphate, which does not affect simple solutions of egg albumen, when added to a mixture of egg albumen and soap causes a rapid and dense precipitation.

As microchemical reactions in tissues are notoriously unreliable and controlled only with great difficulty, these reactions in the test tube necessarily formed the basis of Klotz's theory and their explanation is, therefore, of the greatest importance.

The first step in the present investigation was to determine the nature of this precipitate, that is, whether a real combination of proteid and soap does occur, and if not, to ascertain the actual composition of the precipitate. These experiments were carried out with egg albumen and the blood serum of horses. The soluble soaps used were sodium stearate and sodium oleate. In repeating the experiments of Klotz an identical reaction was obtained, that is, on the addition of the soap solutions to the egg albumen or horse serum a flocculent precipitate appeared which

gradually increased in amount and reached its maximum at the end of twenty-four hours. In order to determine whether or not this was the result of a true combination of proteid and soap or merely a precipitation of some substance in the mixture, the following experiment was performed: Two lots of 100 cubic centimeters each of horse serum were taken; to one, 100 cubic centimeters of distilled water were added, and to the other 100 cubic centimeters of freshly-prepared five per cent. sodium oleate solution. At the end of twenty-four hours a finely granular precipitate was visible in the serum-water mixture, while in the serum-soap solution a copious flocculent precipitate appeared. These were filtered and yielded clear straw-colored filtrates. In order to determine whether or not any combination of proteid had taken place in the soap-proteid mixture, duplicate total nitrogen determinations were made, by the Kjeldahl method, on aliquot parts (five cubic centimeters) of each of the filtrates. The results were as follows:

TOTAL NITROGEN.

SERUM AND WATER MIXTURE.	SERUM AND SOAP MIXTURE.
N	N
20.15 c.c. of — acid.	20.15 c.c. of — acid.
10	10

From these figures it is easily seen that the nitrogen (proteid) contents of both filtrates was the same and that no more nitrogen was thrown out of solution by the soap than by the water alone. This finding is of considerable importance, for if a true combination of proteid and soap had taken place the filtrate obtained after the removal of the precipitate would have contained less nitrogen (an indication of soluble proteid) than the filtrate from the serum-water mixture, where no combination was suspected. As this did not occur the conclusion is inevitable that the precipitate is not a proteid-soap compound, but must consist of a mixture of other substances thrown out of solution.

In order to throw more light on this reaction, experiments were made to determine the influence of the colloids (globulins, albumins) and salts of the serum and egg albumen in the precipitation of the soaps.

GLOBULINS.

The fact that Klotz emphasized the increased precipitation after the passing of carbon dioxide through the fluid suggested the possibility of the globulins of the serum being the main constituent of this precipitated material. It is a well-known fact that globulins are precipitable from neutral solution on addition of carbon dioxide gas. Globulins, therefore, were prepared from normal horse serum in the usual way (ammonium sulphate method with dialysis). The globulin thus obtained was dissolved in a ten per cent. solution of sodium chloride and a small quantity of it added to a weak solution of sodium stearate. Immediately a heavy flocculent precipitate appeared. As a control, however, a ten per cent. solution of sodium chloride was added to a solution of the soap, and an apparently identical precipitation occurred.

It was evident, therefore, that the material precipitated in the first instance was not the globulin but the soap. This reaction is analogous to the salting out of soaps in their commercial manufacture. In an attempt to exclude this factor the globulin was put in solution with the smallest possible quantity of salt, but in every case control experiments using solutions of the same strength of sodium chloride showed an equal and similar precipitation. The only part then which the globulin can play in this precipitation lies in the reaction noted above in which the globulin of the serum or of the egg albumen can be precipitated by the addition of water alone.

INORGANIC SALTS OF THE BLOOD SERUM AND EGG ALBUMEN.

To a weak solution of sodium stearate, an equal quantity of physiologic sodium chloride solution was added. As control, an equal quantity of distilled water was added to another portion of the sodium stearate solution. At the end of twenty-four hours a precipitate was visible in both tubes, but was more marked, however, in the sodium chloride solution. In the sodium stearate and water mixture the precipitate was finely granular and to a certain extent, diffuse, while in the soap-sodium chloride mixture it was more flocculent and the supernatant fluid slightly translucent.

As a further control, a solution of the normal salts of the serum were obtained as follows: One hundred cubic centimeters

of horse serum were added to 400 cubic centimeters of distilled water. The mixture was then boiled and the proteid coagulated by the careful addition of acetic acid. The filtrate, clear and colorless, was then evaporated to dryness to remove the excess of acetic acid and by the addition of distilled water was brought up to the original volume of the serum. A similar solution of salts of egg albumen was obtained after removal of the coagulable proteids. To ten cubic centimeters of each of the proteid-free solutions ten cubic centimeters of sodium stearate solution were added. At the end of twenty-four hours a precipitate was visible which, although much finer in appearance, approximately corresponded to the precipitate formed by the addition of the physiologic sodium chlorid solution to the sodium stearate. As the result of these tests it may be stated that while the inorganic salt content of egg albumen or of serum does not probably cause the whole of the voluminous precipitate obtained on addition of soap to the proteid, it is a factor in the production of a small amount of it.

In this connection attention must be called to the calcium content of the egg albumen (1.7 to 2.9 per cent. of the ash) and blood serum (.015 per cent. of the serum). In both of the reactions with these fluids and the soaps this calcium is undoubtedly a factor in precipitating this latter as calcium compounds.

ALBUMINS.

The effect of salt-free albumins was then investigated. These were prepared by dialyzing egg albumen and horse serum for about ten days or until tests for chlorids were negative. In each instance the precipitated globulins were filtered off; in the case of the serum a small amount of water soluble globulin probably still remained in solution. Comparing solutions of albumins so prepared plus stearate soaps with the control solutions of egg albumin and serum albumin respectively in water, at the end of twenty-four hours no difference was visible. In all the tubes a very small amount of a very finely granular precipitate occurred.

These reactions render it probable that the albumins do not enter into the composition of the precipitate which is formed when the soaps react with the egg albumen. In order, however, to exclude the possible factor of the albumen inducing a "colloidal precipitation" experiments were performed with other

colloid substances, for instance, gelatin and starch. With gelatin a marked precipitation was apparent with the soaps, but as the admixture of calcium salts with this substance could not be eliminated, solutions of other colloids like starch were tried.

A rather fluid starch paste was prepared. Some of this was added to equal parts of egg albumen and blood serum. In both cases a somewhat gelatinous precipitate occurred which was shown to consist of starch. Solutions of starch added to the soap solutions caused a precipitate which was analogous to that produced by water alone. Apparently, therefore, colloids may precipitate starch from solutions as well as soaps, but the reverse does not occur.

Thus far only a small amount of the precipitate has been accounted for. We have shown that the inorganic salts of the serum are responsible to a slight extent in the precipitation of the soaps; the albumins on account of their colloidal nature, possibly also in the same degree, while the globulins enter only slightly into the composition of the precipitate as a result of the dilution of the mixture by the solutions added.

FATTY ACIDS.

The changes occurring in soap solutions suggested the possibility of fatty acids playing a part in the precipitate. For example, a weak solution of sodium stearate or oleate freshly prepared and filtered is translucent and free from any precipitate. When tested with litmus it is alkaline in reaction. If it is allowed to stand for twenty-four hours a granular precipitate in the case of the stearate, gelatinous in the case of oleate, gradually appears.

If the precipitates are filtered off and the filtrates allowed to stand for twenty-four hours a similar precipitate reappears. This precipitate is insoluble in water, but dissolves readily in ether and chloroform. Such a chloroform solution reacts acid to litmus and contains fatty acid. These facts just outlined can be easily explained. Part of the soap on passing into solution undergoes dissociation and hydrolysis with the production of sodium hydroxid (NaOH) and free fatty acid. The mixture, therefore becomes alkaline and the fatty acids gradually precipitates. This passes into solution in the chloroform.

With these changes in mind, the proteid-soap compounds were

examined as follows: A quantity of the precipitate obtained on the addition of a sodium oleate solution to egg albumen in suspension was now shaken up with the neutral chloroform and found to a great extent to be soluble. Tested with litmus, the chloroform reacted acid to litmus and the neutral point was only reached after the addition of a definite amount of a deci-normal solution of sodium hydroxid. This observation, therefore, demonstrates conclusively that the major portion of the precipitate which Klotz considers to be a proteid-soap compound is composed of fatty acids.

Fatty acids may also be thrown out of solution on the addition of weak acids. If carbon dioxid (CO_2), which in aqueous solutions is a weak acid, be passed through a solution of soap, a flocculent precipitate gradually separates out, which when taken up in chloroform and tested, reacts acid to litmus. In the formation of the hypothetical proteid-soap compound Klotz emphasized this increased precipitation on the addition of carbon dioxid. He further states that the precipitation is increased by the addition of a solution of acid calcium phosphate. This reaction is, of course, due in part to the precipitation of the fatty acids by the acid solution and also to the formation of insoluble calcium soaps by the addition of a soluble calcium salt.

To summarize briefly: The so-called proteid-soap compound does not exist. The material may be due in small part to a precipitation of the soaps by the inorganic salts of the serum or egg albumen and in small part to globulins thrown out of solution. An equally small part is caused by a precipitation of the soaps or fatty acids by the colloid substances in the serum and egg albumen. The main portion of the precipitate, however, consists of fatty acids obtained from a hydrolysis taking place in the soap solutions.

THE STAINING OF FATTY COMPOUNDS WITH SUDAN III AND SCHARLACH R.

Klotz states that the soaps are ready solvents for Sudan III. He attempts to demonstrate this by making a concentrated aqueous solution of the soap and adding powdered Sudan III. He states that the clear, deep, red solution which results can be filtered, diluted and, when evaporated to dryness, yields pinkish yellow areas which are distinguishable from the golden-red stain-

ing fat. He cites the statement of Fischler, who asserts that Sudan III is soluble in soap solutions, but who further states, however, that the soap when stained with Sudan III rapidly loses its color when treated with 70 per cent. alcohol, the color being transferred to the alcohol. With this latter statement Klotz fails to concur wholly. He admits that this is true in regard to soap solutions in the test tubes, but states that soaps in the tissue are less soluble in weak alcohols. The retention of the stain here, he thinks, is due to the combination of the soaps and proteids already discussed. These observations, in view of our experience with the proteid-soap compounds, demand re-investigation.

Scharlach R and Sudan III are soluble in alcohol, chloroform, ether, toluol, acetone, etc., and in certain fats and lipoids. When added to water no color is imparted to the fluid even at the end of several days. It is generally accepted that the stains are insoluble in water.

SOLUBLE SOAPS.

If to a fairly concentrated solution of sodium oleate which has been freshly made and filtered a small quantity of Sudan III is added, after "thorough mixing," no color is immediately imparted to the fluid. Gradually, however, the solution assumes a pinkish color which, after standing for a while, becomes much deeper. At the end of twenty-four hours the solution is colored a deep red. If some of this solution is shaken with ether or chloroform the color immediately leaves the aqueous solution and is transferred to the chloroform and ether. When tested with litmus the solution reacts strongly acid, and if evaporated to dryness, reddish yellow granules of fatty acid are visible under the microscope.

The colorless condition of the soap solutions immediately after the addition of the Sudan III and the gradual reddening of the mixture must be attributed to the same reaction previously described where the soaps slowly undergo hydrolysis and the fatty acids formed thereby gradually assume the stain which eventually colors the solution a deep red. In other words the deep orange red color is not due to the soaps which have taken up the stains, but rather to the fatty acids formed by hydrolysis and temporarily held in solution by the soaps.

CALCIUM SOAPS.

To a quantity of the original reddened aqueous solution of the soluble soap a quantity of absolute alcohol was added sufficient to raise it to a seventy per cent. alcohol solution. When this alcoholic solution was treated with a soluble calcium salt, a pinkish white precipitate appeared at the end of twenty-four hours, the supernatant fluid remaining deep orange red. The precipitated substance was filtered off; when dried it appears white and very fluffy in consistence. It is insoluble in water, but dissolves in chloroform when a few drops of a mineral acid are added. The precipitate is, therefore, calcium soap which does not take the stain with Sudan III.

In order to prove this point more decisively attempts to stain calcium soaps were made in another manner. Calcium soaps were prepared by the precipitation of the soluble soaps—sodium stearate and oleate—with a soluble salt of calcium. The collected precipitate was thoroughly washed with water to remove soluble salts and afterward with alcohol to remove traces of fatty acids. In the case of the stearate a finely granular opaque white salt was obtained, while with the oleate compound a rather gelatinous material resulted.

A relatively large quantity of the insoluble calcium stearate was suspended in an absolute alcohol solution of Sudan III. As has been previously shown, calcium soaps are rather insoluble in cold absolute alcohol. The suspended material, now filtered off, appears pinkish white. Washed with absolute alcohol, the pinkish color disappears and is imparted to the wash alcohol. The insoluble soap remains opaque white. The pinkish color of the soaps treated with Sudan III is not due to real staining, but is produced by a mere mechanical mixture of the dissolved stain and the insoluble compounds. Attempts which were made to stain these soaps by methods outlined below were also fruitless.

NEUTRAL FATS AND LIPOIDS.

It was deemed extremely important to determine if Scharlach R and Sudan III could be used as differential stains for the various fats and lipoids. Several methods of demonstrating this were tried. For example, the examination of frozen sections of colloids (gelatin, celloidin) and of various fresh and dehydrated animal tissues impregnated with solutions of the fat and

lipoids to be examined. These methods were abandoned in favor of the following, which seemed to be more applicable to the problem:

To solutions of fat and lipoids Scharlach R and Sudan III respectively were added. The resultant clear solution was thrown into water and the fats precipitated out of their original solution. This method we considered relatively successful because of the ease with which the stained fat can be separated from the solvent. While the fats are fairly soluble in alcohol and ether, they dissolve much more readily in chloroform, which is also an excellent solvent for Sudan III and Scharlach R. Chloroform also will not mix with water, that is, it is insoluble in that liquid.

If, therefore, a chloroform-Sudan III solution of a fat is added to water the fat will precipitate out, so will the chloroform and although both may be colored red, the fat rises to the surface of the fluid while the chloroform settles to the bottom, allowing an easy differentiation. The chloroform, however, must be removed by evaporation with heat before one may say definitely that the red globules are the fatty compound and not the chloroform. In this method a portion of stain remains adherent to the floating fat, while most of the insoluble stain is suspended through the fluid. It is necessary, therefore, that this fat be not filtered, but skimmed off, redissolved in the solvent and reprecipitated several times in order to be certain that the red color is due to the fat alone and not to any of the insoluble stain which may have been accidentally caught in the suspension. This method, although a cumbersome one, has been found most excellent for determining the staining power of various fats and lipoids. The same method may be used when alcohol is employed as a solvent.

In his original communication Klotz expresses a preference for Sudan III, for while he found that Scharlach R stained more intensely, staining with Sudan III was more satisfactory in that the precipitation of crystals from the saturated solution was more easily obviated. In the method which I adopted this difficulty was not encountered. Scharlach R and Sudan III were used interchangeably. No differences were noticeable in fats and lipoids stained with either Scharlach R or Sudan III except differences which would distinguish the original alcohol solutions. Scharlach R stains fats more intensely, the red being much deeper and more pronounced. Fats stained with Sudan III assume more of a deep orange-red color. The staining of fats by these dyes is

dependent on the fact that these dyes are more soluble in the fats than in the solution in which they are originally dissolved.

FATTY ACIDS.

Pure oleic, palmitic and stearic acids were employed in the following experiments:

Oleic Acid.—To a definite quantity of oleic acid a small amount of Sudan III in substance was added; solution occurred immediately and the liquid oleic acid was colored a deep red. This color was much more intense than that of the saturated seventy per cent. alcoholic solution. When the oleic acid was filtered into distilled water it separated as deep red opaque globules. Repeated solution and reprecipitation failed to cause the acid to lose its deep red color.

Palmitic Acid.—The acid was dissolved in absolute alcohol and Sudan III added. The solution was now filtered into distilled water. The acid thrown out of solution was not nearly so deeply tinted as the oleic acid and appeared light red in color. If the fluid on which this reddish fatty acid material was floating is heated to about the boiling point the fatty acid melts into globules which take on an intensely red color exactly similar to that obtained when the stain was dissolved in the oleic acid. On cooling the acid separated out as firm red globules. This material collected and redissolved in absolute alcohol was filtered again into distilled water. The fatty acid which now separated out appeared almost white, the slight pinkish color being due to the color of the fluid in which it was suspended. If, however, pure palmitic acid is heated to its melting point and a few particles of the Sudan III are added the acid dissolves the stain and the fluid takes on the deep red color which was noticed in the case of the oleic acid.

Stearic Acid.—The same results were obtained with this acid.

CHOLESTERIN.

This substance, obtained in pure form from gallstones was treated by the same method. The first precipitate appeared deep red, but further solution and re-precipitation removed all the color until the final material was almost a pure white. If cholesterin is raised to its melting point and Sudan III in substance is added the fluid cholesterin dissolves the stain and takes

on the same deep red color noticed with the oleic acid and fluid palmitic acid. This indicates that only when cholesterin is in a fluid state will it take the stain.

NEUTRAL FATS.

Neutral fats were obtained from both mutton and beef suet. Treated in a manner similar to the other fats, the neutral fluid or semi-fluid fats retained their deep red color after repeated precipitations.

LECITHINS.

Lecithins were prepared from the yolks of eggs and from brains dehydrated with dried calcium sulphate. A quantity of egg lecithin dissolved in a chloroform solution of Sudan III was added to water. The deeply red-colored chloroform fell to the bottom of the vessel. On removal of the chloroform by heat over a water bath, the stain came out of solution and suspended itself in the fluid; the lecithin, on the other hand, assumed a swollen pasty condition like a stiff emulsion which retained a distinct salmon-yellow color. This gelatinous material, which could be lifted out of the solution on a stirring rod, was transferred to fresh amount of distilled water, in which it then dissolved, coloring the aqueous fluid a light yellow pink.⁴ This indicates that lecithin in solution has the power to stain feebly.

In a second experiment with lecithin a quantity of a chloroform solution obtained from dehydrated brain was added to Sudan III solution. The filtered solution was allowed to evaporate spontaneously and the residue examined under the microscope. Everywhere orange-red globules (lecithin) were interspersed among a yellowish granular material. Lecithin stained with Sudan III, after impregnation in gelatin, also took a salmon-red color. It is obvious, therefore, that lecithin in substance, like the neutral fats, will take and retain the stain.

From these observations it may be concluded that the staining of solutions of the soluble soaps by Sudan III is due to their hydrolysis into fatty acids in which bodies Sudan III and Scharlach R are soluble and which are, therefore, colored by them.

After repeated solution and re-precipitation oleic acid and the neutral fluid fats stained by Sudan III retain their original

⁴Koch: *Zeit. f. physiol. Chem.*, 1903, xxxvii, 181.

deep red color. Palmitic and stearic acids and cholesterin, on the other hand, become decolorized by this process and, therefore, can not be stained by these bodies. Lecithin gives a salmon-red color when stained with Sudan III. This is interesting because it places lecithin, so far as staining reaction is concerned, between the fluid fats and the soaps and solid fats.

According to Michealis,⁵ the staining of fats by Sudan III is purely a physical and not a chemical process, but he admits that the physical properties of the body depend on its chemical character. He considered the union between Sudan III and oleic acid a physical one depending on the property of the unsaturated fatty compound in becoming oxidized. While this may be an explanation for the retention of the stain by the oleic acid, neutral fats and perhaps lecithins containing oleic acid radicals and the non-retention by the palmitic and stearic acids, the fact that other crystalline lipoids like cholesterin act similarly to the crystalline fatty acids suggest that the question as to the staining of the substance depends on its physical condition entirely.

This is particularly emphasized in the experiments with palmitic and stearic acid and cholesterin, where it was shown that when these substances were transformed by heat to their fluid condition they dissolved the stain immediately. On return to their solid state, however, they refused to retain the dye. Again those fatty compounds which at room temperature are fluids or semi-fluids are those which hold the stain even after repeated solution and reprecipitation.

This explains the cause of the discrepancies in the statements of various authors⁶ as to the staining of fatty acids with Sudan III or Scharlach R.

It is believed that the results obtained warrant the statement that only those compounds of a fatty nature take these stains when they possess the physical characteristics of a fluid or semi-fluid at room temperature; other substances which allow of liquefaction by increase of temperature also react to the dye when in their fluid state. Such substances are butyric acid, oleic

⁵ Ueber Fett Farbstoffe, *Archiv. f. Path. und Physiol.*, 1901, clxiv, 263.

⁶ Daddi (L.): Nouvelle méthode pour colorer la graisse dans les tissue *Arch. Ital. de Biol.*, 1896, xxvi, 142; Rieder (H.): Ueber die Verwendbarkeit des Farbstoffes Sudan III in der klinischen Mikroskopie, *Deutsch. Arch. f. klin. Med.*, 1897, lix, 444; Handwerck (C.): Beiträge zur Kenntniss vom Verhalten der Fettkörper zu Osmiumsäure und zu Sudan, *Zeitschr. d. Wissensch. Mikroskopie*, 1898, xv, 177.

acid, triolein, tributyrin and lecithin. Palmatic and stearic acids and their neutral glycerids and cholesterin come into this group when the temperature is above their melting point.

The results show that neither calcium nor sodium soaps, palmitic nor stearic acids will at room temperature take the stain with Sudan III or Scharlach R, hence the material staining by these substances which Klotz described as occurring at certain stages in calcareous degeneration can not be any of these compounds. In all probability it is a mixture of oleic acid, triolein and lecithin. This agrees with the findings which I have reported as a result of the chemical analysis of aortas in various stages of calcification.

GENERAL CONCLUSIONS.

1. The so-called proteid-soap compound of Klotz is not a true chemical combination, but a mixture made up mainly of fatty acids with small amounts of calcium soaps and globulin.

2. Sudan III and Scharlach R stain substances of fatty nature only when they are in fluid or semi-fluid. As oleic and butyric acid, triolein, tributyrin and lecithin are in this state at room temperature, they form a group to which must be limited the application of micro-chemical methods.

A CONTRIBUTION TO THE PATHOGENY OF SPASTIC RIGIDITY OF CHILDHOOD.

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PLATES I AND II.

It is not our purpose to enter into the discussion of the pathogenesis of all forms of rigidity occurring in infancy and childhood; the task would far exceed our resources and the question is too complex to be considered with any degree of fairness in this brief communication. The main object we have in mind is, to call further attention to the inadequacy of our actual knowledge of infantile rigidity and

to the inexactness of our classification of the various spasmodic affections met with in infancy and early childhood. It is more particularly the anatomic facts underlying the close analogy which tetany bears, clinically, to the various forms of birth palsies that we desire to investigate. That this analogy is very great, there can be no doubt, if one is to judge by the frequency with which cases of so-called tetany have proved to be nothing less than some form of cerebral palsy of childhood and under which head we include, for the sake of convenience, Little's disease, spastic diplegia, chronic internal hydrocephalus, serous meningitis, etc., *i. e.*; all forms of cerebral lesion encountered in infants and young children and which have as main clinical manifestation—spastic rigidity of the extremities.

In other words, what is the anatomic substratum of the clinical symptom: spastic rigidity? is this the main or only external expression of any diseased state, or merely symptomatic of an otherwise clearly-appreciable pathologic entity?

But, in the first place, what is understood by tetany? "An affection characterized by peculiar bilateral tonic spasms of the extremities, either paroxysmal or continued" (Osler). The well known fact that the disease occurs under very different conditions and with all degrees in the completeness and severity of its symptomatic picture, would easily induce one to regard tetany more as a symptom-complex than as a distinct clinical entity; which view moreover would be more in harmony with what we actually know of its pathological anatomy, as we shall see later. It may well be however that tetany does possess a perfect autonomy; a supposition which would be all the more acceptable if the term tetany were applied only to the complete forms described by Escherich.

But then true tetany is an extremely rare disease, at least in this country. It is more common to see incomplete types of the affection, cases in which a few of the symptoms only are present, and not infrequently, some in which one of the so-called characteristic manifestations of tetany constitutes the entire clinical picture. The actual tendency however is not to regard such conditions (isolated carpo-pedal spasm for example) as instances of true tetany, but rather as symptoms of some other disease. It was, of course, only to the ill-constituted or atypical forms that we referred, when speak-

ing of the difficulties which the differential diagnosis between cerebral palsy and tetany may present.

Aside from the multiplicity of its etiologic factors and the rarity with which it assumes the classic type, tetany still presents another peculiarity which would tend to minimize its chances of obtaining recognition as a distinct entity, and that is its occurrence, either fully or partially constituted, in conjunction with or as a complication of a number of other nervous diseases: Basedow's disease, cerebral and cerebellar tumor, syringomyelia, hysteria, epilepsy, etc.

Finally, other rare types of spasmodic affections in children have been recently described, which are closely analogous to tetany, such as the *Myotone spastique persistante de Hosch-singer*, or *Pseudo-tetanus of Escherich*, the underlying anatomic lesion of which is the *méningite cérébrospinale sèche*.

Neither of the cases about to be reported was definitely regarded as being tetany, but such was the diagnosis originally proposed in both; later, one case (cerebral sclerosis) was regarded as an instance of cerebral diplegia and the other (chronic internal hydrocephalus) considered to be cerebral tumor. In their clinical manifestations the two cases resembled each other very closely. Before giving a detailed description of the interesting histologic changes observed in the central nervous organs of these cases, it would be well to briefly consider, in the first place, the actual status of our knowledge concerning the pathologic anatomy of tetany.

The many observers who have seriously studied this question have not all reached the same conclusions, but they may be conveniently divided into two main groups:

(a) To the first group belong those (Schultze, Berger, Weigert, Loos, etc.) who, despite most scrupulous technique and careful microscopic study, have failed to find any appreciable changes in the central nervous system, and for whom, therefore, the pathologic anatomy of tetany remains entirely negative.

(b) Forming the second group, are a number of authors whose results have been positive, but to what limited extent these results are concordant, will presently be seen.

As regards first, macroscopic changes, it must be said that in those cases in which gross anatomic lesions did exist, they

were either associated with some affection which tetany simply complicated, or else, were so combined or distributed as to render it impossible to isolate those underlying the manifestations of tetany.

Schultze found a patch of sclerosis in the upper cervical region and Traina pseudo-syringomyelic cavities in the cervical cord.

Köster described blood coagula upon the cauda equina, the cervical nerve-roots and along the course of the sciatic nerve.

Several observers have found, in cases of tetany, a slight serous infiltration of the membranes of the brain and spinal cord and even of the parenchyma of these organs, or, in other instances, a slight hyperemia of the same; all of which changes, however, practically remain within the limits of physiological reaction.

When it comes to the question of the histological changes observed in tetany, however, we are much better informed, as we possess more abundant data from which more definite notions can be derived. There have been numerous contributions to this particular chapter of pathology within the last decade, but we can only briefly analyse a few of the more important ones.

Langhans noted periarteritis and periphlebitis about the white commissure and anterior horns of the cervical enlargement of the spinal cord.

Pick, in the case of a young epileptic who developed typical tetany, found calcification of the smaller blood-vessels and fine arterioles especially of the centrum ovale and cerebellum. He is of the opinion that the narrowing and partial obliteration of the lumen of numerous blood vessels leads to the development of symptomatic tetany. A similar postmortem finding was observed in a woman who developed tetany secondarily to an operation for cataract.

Weiss examined the spinal cord of a child who had presented marked symptoms of tetany during three months following removal of the thyroid body. He found decided changes in the gray matter of the cervical cord. The ganglion-cells in great numbers were swollen and their nuclei displaced towards the periphery and often distinctly flattened. Vacuoles in both cell and cell-process were commonly observed. A number of cells were atrophied and their axones retracted

within the cell-body. Aside from these changes which were especially prominent in the lateral group of the seventh and eight cervical segments, Weiss also found distinct spindle-shaped expansions of the axis-cylinder processes situated both in the anterior nerve-roots and in the central gray matter.

Changes similar to those described by Weiss have been observed by Bonome and Cervesato, Kirchgaesser and Katz in ordinary cases of tetany in children.

Bonome and Cervesato found in two cases of moderate intestinal disturbance, in which typical tetany developed only during the few days preceding death, very distinct changes in the gray matter of the cord. There was an appreciable atrophy of many ganglion-cells especially those of the mesial group; likewise atrophy with occasional varicose swelling of the nerve-fibres situated in the gray matter. In addition to these changes, there was noted a distinct proliferation of the neuroglia, which newly-formed tissue was often the seat of oedema and softening and consequent disintegration and cavity-formation; more especially were these irregular spaces observed in the gray matter. The authors regard the whole process as one closely analogous to poliomyelitis. The absence of paralysis in these cases, they attribute to the integrity of the lateral cell-groups of the anterior horns.

Katz noted in the case of a child, who, at the time of death, presented typical manifestations of tetany: cloudy swelling of the ganglion-cells of the anterior horns. The cells were granular in appearance and their nuclei indistinct. Furthermore, there existed the most extreme engorgement of the blood vessels about the cervical enlargement.

Kirchgaesser studied, with the aid of Marchi's method, the changes in the spinal cord in two cases of tetany in children and observed well-marked changes in the intramedullary segment of the anterior and posterior spinal nerve-roots, more particularly of the cervical and lumbar enlargements. In the anterior nerve-roots, the changes involved the entire axone from its origin in the multipolar nerve-cell. Similar alterations existed in the radicular filaments of the accessorius and hypoglossus, and even in the fasciculi solitarii and in the anterior commissure of the cord. The smaller blood vessels and capillaries were uncommonly distended but without appreciable changes in their walls. Absolutely similar changes

were observed by Kirchgaesser in a case of (a) laryngospasm with facial phenomenon and in a case of (b) persistent spasm of the entire musculature without the characteristic attitude of the hands or other of the latent symptoms of the disease.

Ferranini and Rossolimo report the findings in cases of tetany associated with gastric dilatation. In one of the cases, a patient of twenty-three years of age, gastric disturbances had existed for over twelve years. The manifestations of tetany appeared thirty-three hours antemortem, and rapidly involved, with growing severity, the whole musculature of the body. At the autopsy, a distinct venous hyperemia of the pia as well as of the actual nervous parenchyma was macroscopically appreciable in both brain and spinal cord. Microscopically, well-marked changes were found more particularly in the medulla and in the cervical cord. Numerous nerve-cells were altered in various ways; frequently they were swollen and their pericellular spaces extensively dilated. These changes were especially prominent in the domain of the vesicular column of Clarke.* Thickening of the cell-membrane and various stages of chromatolysis were commonly observed. Vacuolation of the cell-body was likewise fairly common. The nucleus itself was almost invariably deformed, decidedly enlarged, flattened against the periphery of the cell-body and now and then almost extruded from it. The cell-processes were proportionately thinned and often sharply bent upon themselves, or else presented varicose enlargements. No appreciable alterations were to be seen in the nerve-fibres.

Rossolimo refers to the changes observed in a subject, forty-three years of age, who had suffered from gastric disorders during the last fifteen years of life and in whom the most typical syndrome of tetany developed a few days antemortem. Aside from slight changes in the muscles, histologic examination revealed the presence of spindle-shaped swellings in the course of the axis-cylinder processes both in the anterior nerve-roots and in the peripheral nerves. There was also to be seen a varying degree of chromatolysis about the ganglion cells of the spinal cord in the vicinity of which the blood vessels were more often found markedly congested. The majority of nerve-cells however were relatively intact.

Peters in his recent monograph on the pathogenesis of the

classic manifestations of tetany, gives a very exhaustive description of the lesions observed in three cases, and comes to the following conclusions:

1. Tetany is not a functional but an organic disease.
2. Its anatomic substratum is essentially constituted by an inflammation of the extra-dural connective tissue, which, extending into the intervertebral foramina, involves the dorsal nerve-roots together with their attached ganglia, leading thus to the development of (a) a neuritis interstitialis, (b) a gangliitis.
3. The primary pachymeningitis externa is characterized by the presence of: round-cell infiltrations, disseminated patches of epidural fibrinous or gelatinous exudate, hemorrhages along blood vessels whose walls are diseased. The hemorrhages are found more particularly in the intervertebral patches. The pachymeningitic alterations, although present in different places, are most marked and constant about the nerve-roots of the seventh and eighth cervical, the lower lumbar and upper sacral segments.
4. The neuritis interstitialis involves the motor as well as the sensory nerve-roots but is absolutely limited to their extra-dural segment. The peripheral nerves are free. Both the intra-dural and intra-medullary portions of the nerve-root are likewise usually intact; only occasionally do they present evidence of secondary degeneration.
5. The gangliitis manifests itself by (a) proliferation of the intracapsular endothelium with marginal vacuolization, (b) round-cell and leucocytic infiltration of the stroma between the nerve-cells which are thereby compressed, (c) degenerative changes of the cell-protoplasm (disintegration, karyolysis, etc.).

The author remarks that endothelial proliferation and protoplasmic cellular alterations are not peculiar to tetany, occurring in other affections which are characterized by the presence of contractures. But, the mode of development of these processes, especially the interstitial infiltration, does constitute a feature peculiar to tetany. The pachymeningitis externa is likewise characteristic of this disease. It was observed in all the cases, and furthermore, it involved only those nerve-roots whose area of peripheral distribution corresponded to the seat of clinical manifestations (spasms, con-

tractures, etc.) and respected those corresponding to the peripheral regions which had remained free during life.

6. The more intense the pachymeningitis, the more severe the muscular contractures and the shorter the intervals between them; so that in very pronounced cases, the lesions may determine permanent tetanic manifestations in the affected limbs.

In three of the author's cases, certain peculiarities have seemed of particular interest to us for purposes of later comparison and we therefore make note of them in this connection.

In Case IV the author found: slight sclerosis of the brain, marked dilatation of the ventricles especially the fourth. Histologically: cellular agglomerations consisting for the most part of multinuclear leucocytes, were to be seen between normal cells and fibres and infiltrating both the gray and the white matter in the cord as well as in the brain. The author designates this process by the term *Encephalitis interstitialis (luetica?)*.

In Case V chronic hydrocephalus of marked degree. A cross-section through the lower medulla showed distended capillaries and hemorrhages between the ganglion-cells of the subventricular nuclear collections. Accumulations of leucocytes in the perivascular spaces. These lesions were very marked and suggestive of *encephalitis interstitialis*.

In Case VII, marked congestion and slight œdema of brain, small punctiform extravasations in the course of the *arteria spinalis anterior*. In the posterior horns and in the intramedullary course of the posterior nerve-roots, degenerated areas were to be seen. Small round-cell and leucocytic infiltrations were found between the individual fibres of the motor nerve-roots.

Thus far, then, the histologic changes observed in the central nervous system by different authors may be summarized as follows:

Lesions which, in the first place, are essentially confined to the spinal cord and which involve more particularly the cervical and lumbar enlargements.

Lesions which vary in intensity all the way from simple engorgement of the blood vessels of the pia and central gray matter of the spinal cord (occasionally extending to the ad-

joining portion of the medulla oblongata), to well-marked alterations of the ganglionic nerve-cells in the gray matter and more particularly of those of the motor groups; and changes in the nerve-fibres, likewise most pronounced in those fibres coursing through the central gray matter and in the intra and extramedullary segments of the spinal nerve-roots.

The ganglionic nerve-cells exhibited a most variable degree of chromatolysis, which, in certain instances, had gone so far as to lead to total disappearance of the cell. The nerve-fibres showed swelling of their axis-cylinders and loss, in greater or lesser amounts, of their myelin substance.

In addition to the changes included in the above synopsis and which practically embodies the joint-results of the great majority of observers who have written on this subject, there still remains to mention the lesions described by Peters (*i. e.* pachymeningitis, neuritis and gangliitis) who, as we have just seen, holds entirely different views from the rest as regards the pathogeny of tetanic manifestations; since he places the causative lesions outside of the dura and maintains that the central nervous organs themselves and the leptomeninges are entirely free.

All these facts, acquired in recent years and under all the favorable circumstances which our modern methods of technique and investigation ensure, deserve, certainly, to be carefully recorded, but nevertheless, they must be weighed even more carefully, accepted with caution and even with certain restrictions. In the first place, it must be stated, that, as far as alterations in the nerve-roots are concerned, Zappert observed destruction of nerve-fibres within the spinal nerve-roots in most children dying during the first year, although there had been clinically no symptoms whatever of nervous disorder.

It will be remembered also, that in a certain number of these cases, the manifestations of tetany were either associated with other conditions (epilepsy in one case reported by Pick), followed extirpation of the thyroid (probably of the para-thyroid as well) body, or else, developed antemortem, or very late, at least, in the course of some chronic affection of many years' standing and one which had seriously compromised the general nutritional integrity of the individual.

It would seem logical, in this connection, to admit that the

lesions observed in the central nervous organs in the last category of cases (*i. e.* in cases of tetany following thyroid extirpation or prolonged disorders of nutrition), might be compared to those found in the spinal cord in a good number of cases of hæmic diseases, as in pernicious anemia, for instance. In other words, they might be regarded as the expression of nutritional disturbances, resulting, either from the loss or absence of some important and yet unknown element concerned in the neutralization of certain toxic principles elaborated in the course of metabolism (as in the case of parathyroidectomy), or from an insufficient elaboration or production of active cells, an adequate supply of which is the indispensable prerequisite to the maintenance of nutritional equilibrium (a deficiency realized in case of disease of the hæmapoietic organs).

In tetany, it is true, the lesions are to be found more particularly in the central gray matter, it is the ganglionic nerve-cell of the anterior horn which suffers most or bears the brunt of the invasion; whereas in pernicious anemia and kindred affections, it is a sclerosis of the white columns which is most commonly observed. But there is here, merely the question of selective action of underlying toxic principles and we are of the opinion, that the prime factor in producing both categories of changes, is unquestionably constituted by some toxic agent freely circulating in the system.

It must be said, moreover, that, cellular changes absolutely analogous to those described in connection with tetany, have been observed in different pathologic conditions which affect, similarly to pernicious anemia, the general nutrition, and without having given rise to any of the clinical manifestations characteristic of tetany; in such conditions for instance as Addison's disease, operative myxoedema, lesions of the pancreas, as well as in the various forms of auto-intoxication: uræmia, acute yellow atrophy, intestinal auto-intoxication, etc. Uræmia is mentioned by Osler, as one of the conditions with which tetany may be associated, and it is a question, in our mind, if those cases of tetany which develop in the course of gestation are not of the same origin.

Then again, aside from these vitiated nutritional states, in which the cellular changes are attributed to the noxious influence of some toxic principle elaborated within the system, there is still

a series of poisons belonging to different classes, which are capable of inducing similar changes within the central gray matter of the spinal cord.

(1) Toxins derived from suppurative or necrotic processes. Blood and cardiac poisons.

This class produces the cellular changes known as tigrolysis, and also swelling of the cell-body and varicosities in the course of the cell-processes.

(2) Among mineral poisons, the most prone to determine cellular alterations are: arsenic, phosphorus, potassium chlorate, antimony, chlorhydric acid. It is to be noted that phosphorus is mentioned by Oppenheim, as the mineral poison the most frequently concerned in the production of tetany.

(3) Of the organic poisons, alcohol is by far the most important. The cellular changes occurring in chronic alcoholism and delirium tremens have been abundantly described. The alkaloids, more particularly strychnine, morphine and cocaine are susceptible of inducing analogous changes.

It may be mentioned that alcohol and morphia are recognized etiologic factors in the determination of tetany (Osler).

(4) Toxins associated with the various infectious processes: Diphtheria, tetanus, cholera, etc.

In children the influence of the acute infectious diseases in determining tetany is well-recognized, and cholera is mentioned by numerous authors as one of the infections most commonly associated with tetany.

As will be readily seen, the foregoing tabulation of the various agents of a toxic nature (whether bacterial, mineral, organic or derived from the products of defective metabolism) capable of inducing cellular alterations in the spinal cord, practically includes all the factors actually recognized as possible causes of tetany. Reasoning from this fact, it would seem logical to maintain that the cell-changes described in connection with tetany by different authors, and which we have in the main incorporated in the beginning of this article, cannot be regarded as constituting, properly speaking, the anatomic substratum of tetany. It would be more accurate, perhaps, to consider them simply as the expression of the reaction determined in the nervous parenchyma by a sufficient grade of toxemia, whatever its origin or character.

The importance of this latter consideration will become more apparent, when, after describing the findings in our actual observations, we come to the discussion of the pathogeny of the symptoms to which they gave rise.

Neither of the cases which form the ground-work of this contribution have we had the occasion of studying clinically; we can, therefore, only transcribe the main points in the clinical histories as they appear in the hospital records. But being reliably informed concerning the difficulties which diagnosis offered in both these cases, and the examination of the central nervous organs having moreover been entrusted to us, the findings appeared sufficiently interesting to merit publication.

CASE I. B. S., age one year. Female.

CLINICAL HISTORY.

Family History.—Mother apparently epileptic, gives history of fainting spells with loss of consciousness. During a period of three days and coming on, on the sixth day after the birth of her child, the mother had convulsions during which she bit her tongue. Since birth, which was protracted but not instrumental, the child presented the following condition: Hands contracted and head drawn back. The child had always acted queerly not noticing anything about her and apparently not knowing her mother. Began to have convulsions at three months, numbering from ten to twelve in twenty-four hours; they became much more severe during the last weeks of life. At the same time, it was noticed that one foot was turned in. The convulsions were characterized as follows: The limbs of the left side were drawn up, i. e., flexed and twitched slightly, whereas the right arm and leg would become extended and stiff.

At other times, i. e., in the intervals between these convulsive attacks, the child would lie with the arms flexed at elbow and with both fists clenched, the thumb being slightly held in palm of hand by the other fingers flexed strongly upon it. The legs would be fully extended with slight adduction of left leg and foot, and the toes changing position almost constantly, but those of left foot generally held in a state of plantar flexion. Head drawn slightly backward and face turned sharply to the left; neck moderately stiffened; eyes rolling about from side to side and often upwards as well; pupils equal and contracted; child apparently blind. Anterior fontanelle open, posterior not completely closed. Slight motion still present at lambdoid suture. Palate rather high. On the under surface of anterior part of tongue and extending also over floor of mouth is a shallow ulcer about one centimeter in diameter. On lower lip of child considerable fine pigmented hair—on chin fine downy colorless hair.

Abdomen distended, soft, edge of liver felt about one centimeter below costal margin.

Later Notes.—Arm and legs held stiffly, passive motion most difficult especially at elbows and knees; resistance slightly greater on right side. Left arm and leg on measurement are slightly smaller than right. Impossible to straighten fingers and toes.

Spasm of muscle less than on entrance. Child apparently blind. No Babinski reflex on either side. Head symmetrical.

Notes at time of autopsy, October 17, 1905, taken from official records of the Bender Laboratory, read as follows:

Autopsy Record, 0-942. Autopsy by Dr. Pearce, October 17, 1905, at Child's Hospital. Brain only removed.

Clinical Diagnosis.—Tumor of brain; Broncho-pneumonia.

Head.—Of average size. On stripping scalp the anterior fontanelle is slightly open, irregular in shape and tense but not bulging. Posterior fontanelle is closed. The bones of the skull are in apposition except at anterior fontanelle but are not united; by pressure they can be readily moved one upon the other. On removing calvarium the dura is seen to be tense and fluctuant; on section a large amount of clear fluid escapes.

Brain.—Convulsions are flattened. Blood vessels are prominent and deeply congested. Both hemispheres are fluctuant and on attempting to remove the brain from the cranial cavity a rupture along the inner aspect of the left hemisphere occurred with escape of a large amount of clear fluid. Each hemisphere is found to be transformed into a sac lined by smooth greyish-white membrane in which blood vessels are very prominent. The cortex is greatly thinned varying in thickness from two to six millimeters except at the most anterior portion of the frontal lobes where it was about a centimeter in thickness. The dilation of the ventricles is extreme. The third ventricle is greatly dilated as is also the *iter a tertio ad quartum ventriculum*. The fourth ventricle is slightly dilated; this dilatation extending somewhat laterally. The corpora quadragemina and basal ganglia are very prominent. The prominence is due in part to the atrophy of the adjacent structures. Cerebellum shows no changes. The choroid plexuses are slightly congested. Owing to disturbance of relations brought about in removing the brain it is impossible to examine the communications between the ventricles other than those noted above.

Anatomical Diagnosis.—Congenital internal hydrocephalus.

The above description of the macroscopic appearance of the brain might be rendered more complete by inserting a few additional remarks. There are patches of leptomeningitis (thickening and opacity of the membranes) over the occipital pole on all its surfaces and in the fossa Sylvii in the right hemisphere, and over the mesial surface as well as along the inferior border of the occipital lobe in the left hemisphere.

There is evidence of microgyria in various places, but it is most distinct about the motor convolutions of the right hemisphere, the inferior frontal and the inferior parietal convolutions of the left hemisphere. Patches of ventricular meningitis, most marked over the

ventricular surface of the caudate nucleus are distinctly to be seen in both hemispheres, but the lesions are far more extensive in the left lateral ventricle, where a relatively thick, creamy-white, pulpy exudate covers the seemingly enlarged head of the caudate nucleus, spreading out irregularly from that point over the outer wall of the ventricle and into its anterior cornu, and invading more or less diffusely the proximal surface of the parietal segment of the lateral ventricle. The exudate is thickest over the most mesial portion of the caudate nucleus along the stria cornea, and in the vicinity of the foramen of Monro where it partly covers over the larger ventricular blood vessels.

The brain-stem presented a very peculiar aspect; there being, in the first place, a decided asymmetry between the two lateral halves of its various segments (peduncle, pons and medulla). This portion of the brain having been separated from the hemispheres at the level of the anterior corpora quadrigemina and nuclei rubri, *i. e.*, well up in the course of the crura cerebri (despite the unfavorable condition of affairs resulting from the unavoidable tear at the time of removal of the brain as well as from subsequent handling and faulty positions in jars, the hemispheres having fallen completely asunder), and the part being held vertically, there is noticed a decided deflection or inclination of the brain-stem to one side, seemingly due to atrophy of this side; this atrophy affecting about equally the various segments from the subthalamic region to the motor decussation. Not only is one lateral half shorter, but also decidedly lesser, in size; the disparity in the volume of both halves of the brain-stem being most manifest.

The anterior median fissure of the cord continues upward uninterruptedly over the pons and then becomes lost in the interpeduncular space. Of the anterior pyramids, there is barely a trace; the inferior olives being very prominent although of very unequal size, and bulging on either side of the median fissure, where they truly form the ventral boundary and substance of the medulla. It is in the region of the pons that the greatest asymmetry appears. One has the impression that the superficial transverse pontine fibres are wanting on one side; which would explain the existence of a deep fissure over the ventral surface of this region and contribute much to render one lateral half of the pons both shorter and smaller.

The Fourth Ventricle.—The floor of the fourth ventricle presents nothing particularly atypical, save that its lateral angles are pressed outward and forward, whereby the ventricular floor at its widest part is much more plane than in the normal state. The cavity of the fourth ventricle as a whole, moreover, is considerably dilated, much more so than is usually seen even in cases of marked hydrocephalus.

Rigorously serial sections of the entire brain-stem; portions of the cortex of the ascending central convolutions, the para-central lobule, the calcarine region and the cerebellum; as well as portions of the ventricular surface of the caudate nucleus at the level of the ependymal lesions, together with the optic nerves, have been sub-

mitted to microscopic study. The cord, as already said, had not been removed. Staining methods employed: Weigert and Pal for myelin-sheaths; Pal-cochineal; Van Gieson, hematoxylin-eosin, and carmin.

Description of Histologic Findings.—At the level of the peduncle and upper segment of the pons Varolii (Pl. I, Fig. 1), microscopic examination reveals the well-marked atrophy of one lateral half of this portion of the brain-stem. Both fasciculi longitudinales posteriores, both bundles of radicular trochlearis filaments, both brachia conjunctiva and both masses of fibres forming the crura cerebri (Füsse pedunculi) are present, but aside from the pyramidal bundles, whose relative proportions, differences of topographic distribution resulting from the absence of certain systems of fibres render unascertainable, all the above-named tracts are decidedly atrophic on one side; the disproportion being most manifest. There is but one mesial fillet and that on the atrophic side, where, on the other hand, only a trace of the lateral fillet exists; whereas on the healthier side, one sees what appears to be a perfectly typical nucleus of the lateral fillet, there being no indication whatever of a mesial fillet. There exists but one corpus quadrigeminum posterius, which is situated on the atrophic side, and but one set of superficial and deep transverse pontine fibres; their corresponding territory on the opposite side cannot even be said to be occupied by reactionless, non-staining degenerated fibres. The result of this anomaly is, that as we consider successively lower cross-sections of the pons, one pyramid, or rather one mass of fibres including the motor pyramidal fibres and the cortico-cerebellar tract, appears free at the ventral border, whereas its fellow follows the usual course between the two sets or layers of transverse-pontine fibres; being covered ventro-laterally by coarse bundles, either transversely or vertically directed, and which evidently belong to the brachium pontis. These fibres cease abruptly at the anterior extremity of the median raphe. At lower levels, a fair number of these fibres pass dorsally to the free mass or corticopetal fibres of the opposing side, thus constituting, at least apparently, what might be called a deep set of transverse pontine fibres for the atrophic hemi-pons.

Small lesions are present along the ventral periphery (occlusion of vessels, infiltration, corpora granulosa), sink in behind the pyramids; they also exist over the ventricular floor and angles and even in the central griseum, extending along the raphe from the ventricular floor into the deeper structures of the tegmentum.

The floor and lateral recesses of the fourth ventricle present a good number of infoldings, and the medullary vela are markedly thinned, showing to what extent ventricular dilatation has occurred as well as the results of chronic inflammation (determination of adherent surfaces in pockets of main sac). An interesting anatomic detail at this level, is the unusual sharpness of outline of the fasciculus predorsalis of Tschermak.

In the lower regions of the pons, the fibres of the brachium

pontis, which (at high levels), were confined to one lateral half of the organ, embracing on all sides one set of corticifugal fibres and which, lower down, penetrated, as already said, into the atrophic side, passing dorsally to the great mass of free pyramidal and cortico-cerebellar fibres, now gradually collect at the ventro-lateral periphery of this side (i. e. the atrophic side), lying just outside of the pyramidal tract, which, we repeat, they cross or cover over ventrally, at no point whatever, leaving thus this pyramidal tract perfectly free at the anterior border of the pons Varolii throughout its whole extent.

Just how the brachia conjunctiva leave the tegmentum to pass into the cerebellum (their course being, of course, just the reverse) is not clear, the fact being that the roof of the ventricle is nowhere intact. Higher up, a thin blade of white matter containing well-stained fibres, in which the outgoing filaments of the patheticus can be distinguished, as well as other fibres evidently belonging to the superior cerebellar peduncles, leaves no doubt that we have to do with the valve of Vieussens, but it must be said that such a process exists only on one side, the other half having disappeared; a fact one readily conceives on seeing the extensive lesions which have occurred at all points along the floor and more especially at the lateral angles of the ventricle, corresponding to the acoustic nuclei, the restiform bodies, etc. The process has even gone so far as to disrupt the cerebellar substance intervening between the nucleus dentatus and the tuberculum acousticum. In part at least, the fibres of the brachia conjunctiva seem to join those of the brachium pontis at the side of the pons. Still lower, near the ponto-bulbar junction, the fibres of the brachium pontis abandon the field situated to the outer side of the pyramid, trend backward and seem to blend with the most superior extension of restiform body of that side (i. e. the atrophic side), then to curve outward and merge into a dense tangle of deep-staining fibres which is capped over by cerebellar folia.

The cross-section of the fasciculi teretes and of the posterior longitudinal bundles appears perfectly normal. Both the motor and sensory pontic nuclei of the trigeminal nerve are distinctly recognizable, as is also the descending or spinal root of this same nerve. A point which is of particular interest, being given the scantiness of our knowledge concerning this special detail in nervous anatomy, is the distinctness with which the relationship between the trigeminal system and the cerebellum can be studied. Continuity of decussating trigeminal fibres with outgoing radicular filaments—the passage of fibres from the vicinity of the fifth nuclei and from their decussating field into the cerebellar hemispheres, by way of the lateral ponto-cerebellar angles, their relations to the fasciculi teretes, etc., are all details which are most clearly appreciable. At this level also, both bundles of pyramidal fibres begin to resemble each other somewhat more distinctly than heretofore, and there is, apparently at least, a partial restoration of the wanting mesial lemniscus. Both abducens nuclei as well as their outgoing radicular filaments come

prominently into view, as do also the subventricular loop and outgoing roots of both facial nerves; the first part of the latter nerve, that which, after its origin, courses dorso-mesially to encircle the abducens nucleus is less clearly appreciable. The same may be said of the nucleus of origin of the facial. Whereas, on the relatively healthy side, the abducens root-fibres emerge at the ventral border, those of the atrophic side leave the pons at the bottom of the anterior fissure which is quite deep at this level. Irradiation of the root-filaments of the trigeminal nerve into their pontic nucleus, is very distinctly to be seen on the healthier side of section. A plexiform network situated dorsal to the pyramidal tracts on either side seemingly represents the system of the corpus trapezoides. Its fibres decussate in the median raphe and literally traverse, in part, the restiform body, as if going to the cerebellum, but in reality, they come into relation with a collection of ganglionic nerve-cells located to the outer side of the restiform body and which probably belongs to the ventral acoustic nucleus; this nucleus having acquired abnormal relations to the surrounding structures owing to the very considerable displacement which has resulted from the extensive lesions involving the bulbo-ponto-cerebellar angle. This view receives additional support as we consider lower sections, i. e. sections passing slightly above the level where the inferior olives come into the field, when there appears just outside of the fully-developed restiform body, a long vermicular collection of ganglionic nerve-cells which borders on the dorso-lateral periphery, curves forward along the ventral aspect of the restiform body and receives the fibres of the cross-coursing bundle attributed above to the system of the corpus trapezoides. This cellular collection is doubtless part of the ventral acoustic nucleus with its tuberculum acousticum. At this level, it is impossible to outline the pyramidal tract on the atrophic side, but it is still fairly well-defined on the opposite side. Both crescentic areas occupied by the descending spinal roots of the trigeminus are clearly defined and practically normal in appearance. The restiform body of the healthier half of this region cleaves into two distinct deep-staining diverging areas, between which, a lighter field oblong in shape and poor in medullated nerve-fibres gradually develops. The posterior longitudinal bundles gradually unfurl beneath the mesial portion of the ventricular floor and slowly trend forward along either side of the raphe. The trapezoid formation is gradually replaced by the cerebello-olivary system.

Lesions of the ponto-peduncular level.—Lesions abound along the ventral periphery, penetrating into the interpeduncular recess, where a large almost empty lenticular cavity exists; giving the impression that it has resulted from softening associated with arterial occlusion. Other lesions are found at the lateral periphery behind the mass of fibres of the "füsse pedunculi," dipping down into the substance proper of the organ, completely severing the most superior part of the brachium pontis, and furthermore interrupting, but only on one side, the mesial fillet at its angle of union with the lateral fillet;

it has thus determined practically its total degeneration. These foci are in relation with vascular alterations of considerable intensity, which are to be found all along the ventral periphery, to a lesser extent along the lateral borders, but also at different points in the ventricular floor of the region. There is distinct evidence of a chronic leptomeningitis and ependymitis. The main vascular trunks appear relatively reduced in their general proportions on cross-section, but their walls are enormously thickened and fibrous in character. These blood vessels often appear as small round or oval structures, constituted by concentrically disposed, somewhat glistening, slightly wavy fibrous layers, occasionally occluded entirely, more often containing a few cells in their lumen, but rarely containing many; in which latter case the vessel-wall is only slightly thickened and its lumen occupied by a few shadow-cells. A number of vessels take a very black color in hematoxylin-stained sections or appear as blackish masses, which, with the high-power, are seen to be made up of equally black spheric cell-like bodies of unknown origin and character. The lumen of many blood vessels is filled with an admixture of these dark-staining black bodies and shadow-cells, both of which are equally to be found in the adventitial spaces of some of them. In between the various vessels, and lodged in the interstices of the leptomeninges, there is present a great variety of elements: granular detritus, apparently a few leucocytes, shadow-cells, a fair amount of blood-pigment with occasional refractive crystals, a few endothelial cells, granular cells containing particles probably derived from disintegrated tissue, occasional amyloid corpuscles and fibrous wavy strands. Less intense but analogous changes, are also observed about the Sylvian aqueduct and ventricular floor. Occasional thrombosed vessels in the depth of the organ are also seen, noticeably in the vicinity of the oculomotor nuclei, much more marked on one side, where the cells of the nucleus appear distinctly atrophied in comparison with those of its fellow, which, despite very appreciable lesions of like character, shows the presence of remarkably well-preserved ganglion-cells. It must be said that vascular alterations are also present in the substance proper of the brain-stem, being practically confined however to the peripheral zone, where the blood vessels show distinct increase in number; many having decidedly thickened walls and their lumen being often either partially or completely occluded.

Interesting changes are to be noted about the Sylvian aqueduct and the floor of the fourth ventricle. The exact location of the aqueduct is readily recognized owing to the persistence, at one point, of the regularly disposed line of ependymal basal cells, with fully-preserved details of morphologic structure. These cells have proliferated and form a thick compact limiting barrier; from their deep surface, emerge the characteristic basal processes which penetrate into the substance of the subventricular griseum. The roof and sides of the Sylvian aqueduct have been completely undermined and present a jagged and irregular outline; the ependyma has been destroyed

and replaced by numerous cells of peculiar morphologic type. They are numerous, rounded in outline, remarkably uniform in size, resembling in general texture the ependymal cell, but much smaller, and instead of being diffusely and finely granular, they possess a much clearer matrix with only two, three, or four diminutive deep staining, bluish-black, dot-like granules, lying far apart from one another with intervening clear matrix. We are totally ignorant of their source and character. The possibility suggests itself that they are newly-formed, immature (judging from already specified proliferation of the same) ependymal cells, or the same, altered by disease, as they do resemble glia cells, such as are seen in different pathological states. These cells are either imbedded in the neighboring parenchyma, or lying free in the cavity along with a greater or lesser amount of degenerative products: granular debris, red blood cells, pigment, granular cells, etc. Scattered through the deep gray substance surrounding the aqueduct, are a number of large cells with rather indistinct markings, but which resemble in a general way, the classic multipolar ganglionic-cell.

The floor and lateral recesses of the fourth ventricle present analogous lesions at various points, but, with the exception of two small foci situated in the middle line and corresponding to the origin of the raphe, these lesions are most extensive in the more lateral portions of the floor and about the ponto-cerebellar angle. Practically over the whole extent of the ventricular floor however, slight changes have occurred, and almost everywhere, the basal ependymal cells are decidedly altered, appearing as jet-black, round or oval bodies, the true nature of which it would be impossible to appreciate, if it were not for the slender processes which can be seen to emerge from under them, and stream ventrally towards the raphe through the subjacent nervous parenchyma. At several points the ependymal line is interrupted; it is most normal near the origin of the raphe. Occasionally, it becomes reduplicated, forming infoldings or tubular prolongations which dip down into the subjacent griseum a varying distance. Two of these infoldings situated at the lateral angles, are larger than the rest, and deserve to be briefly described. One involves the subventricular gray matter dorsal to the descending cerebral trigeminal root on the healthier side; the other is situated under cover of the posterior corpus quadrigeminum on the atrophic side, extending very deeply into the formatio-reticularis and actually bisecting the intra-pontine segment of the brachium conjunctivum at the angle of union of its two blades. At both these points, owing to the presence of a number of fairly normal ependymal cells, the mechanism of this process can be clearly made out. A true invagination of the ventricular floor has occurred, forming an extremely narrow tubular prolongation closely resembling a tubular gland, the walls of which, formed by closely-packed proliferated ependymal cells, are here and there absolutely in contact, thus producing an alternating series of atresiae and dilatations. These lining cells are very regularly disposed, take sometimes the normal stain, but often

are replaced by jet-black globular bodies similar to those previously mentioned in connection with the lesions of the general ventricular floor; again, are intermediate forms observed, i. e., cells which are only partly laden with black granules, so that their texture is partly visible. It would seem that these black granules might represent the products of degeneration, and that the containing cells are truly ependymal cells, or else modified glia cells, which have taken on phagocytic activity. In many places, the ependymal cells have proliferated even to the point of forming local agglomerations, disposed in parallel rows three or four cells deep, and presenting in a very characteristic fashion a regular "shoal arrangement." In the lumen of the tubular infoldings thus determined, and about the ventricular surface at their point of dipping in, much free detritus exists, containing pink or violet (according to stain) staining cells, rounded or oval in outline, and the structure of which is identical with that of the ependymal cells (perhaps a different stage of development and representing a proliferating embryonal type), also the type of cell above described and which is characterized by the presence of isolated dot-like blackish granules in a clear matrix, as well as blood-cells, granular detritus, blood-pigment and occasional classic granular cells. Near the elevated ventricular edges of these tubular prolongations, it is common enough to see peculiar shred-like collections or tufts, evidently formed by the aggregation of a great number of ependymal processes or fibrils. The lesion located beneath the corpus quadrigeminum posterius invades its ventricular surface to such considerable extent, that fairly large cavities have been formed, resembling that described in connection with the lesions of the interpeduncular griseum, and like it, probably the result of vascular obliteration. All around these various lesions, marked changes are present in the blood vessels: thrombosis, thickening, extravasations composed of granular cells, blood pigment, etc. If distinct evidence of a true meningitis is scant at other points along the brain-stem, it certainly abounds over the dorso-lateral border of this segment of the pons, where lesions of considerable intensity are to be seen in the pia covering the posterior corpus quadrigeminum and the adjacent portion of the pons; extreme fibrous thickening of the vessel-walls, occlusion of the lumen with densely packed granular bodies and shadow-cells.

In the thickened meshes of the pia are lodged: desquamated endothelial cells, shadow-cells, granular bodies, granular detritus and blood-pigment. The whole process certainly resembles very closely the lesions observed in syphilitic meningitis (endarteritis obliterans, chronic fibrous thickening, involvement of the subjacent nervous parenchyma, absence of ordinary inflammatory reaction, i. e., of polymorphonuclear leucocytes, limited areas of softening, main localization in the leptomeninges, involvement of the optic sheaths, vascular alterations in the peripheral zone of the nervous parenchyma, etc.).

At the level of the full development of the auditory system (Pl. I, Fig. 2), a very peculiar anomaly presents. Owing probably in part

PLATE I

To Illustrate Drs. Archambault and Baldauf's Article on "A Contribution to the Pathogeny of Spastic Rigidity of Childhood."

Albany Medical Annals, January, 1908.

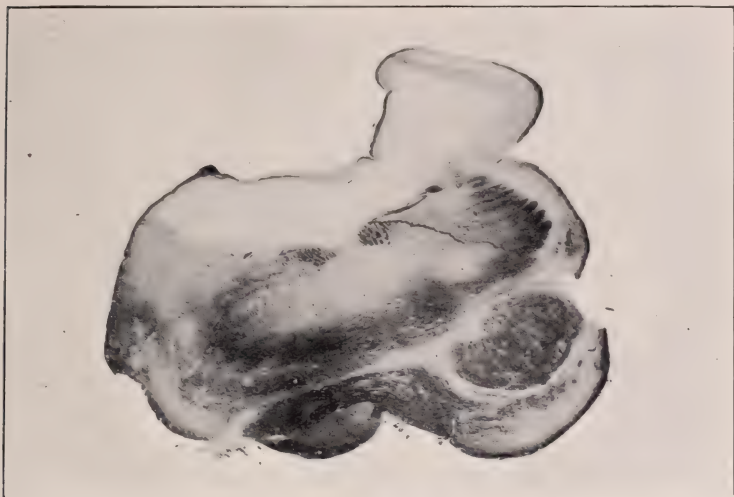


Fig. 1



Fig. 2

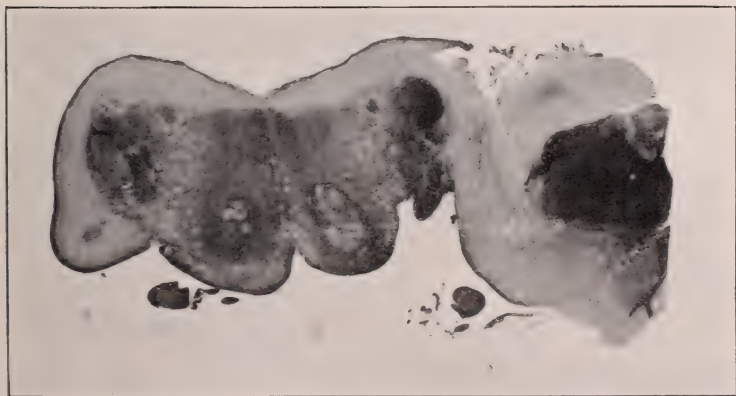


Fig. 3

to extreme ventricular dilatation, but certainly also to absence of one brachium pontis, and perhaps even to the coexisting ventricular lesions on the same side as this absence, a most marked disturbance has occurred in the relative disposition of the homolateral bulbar and cerebellar structures. The corresponding lateral angle of the fourth ventricle dips ventrally along the outer aspect of the restiform body as far forward as the ventral acoustic nucleus, then, the ventricular line arches almost transversely outward, so that it prolongs the general ventricular cavity ventrally at the side of the medulla, as a triangular extension, the apex of which is represented by the ventral acoustic nucleus. In doing so, it has cleaved the restiform body, and in part, the corpus dentatum, and stretched and invaginated the cerebellar structure in such a way that the dentate nucleus lies in the same plane with the olive and spinal trigeminal radix, and the surrounding cerebellar folia project beyond the ventral border of the medulla. The abnormality of situation of the ventral acoustic nucleus is clearly apparent, there being a gross lack of fitness to the neighboring cerebellar structures; it looks as if it were merely stuck on. Not only have the structures been pushed forward and displaced, but owing again, probably, to material loss in volume resulting from absence of the pontine system, they have even been twisted upon themselves, much in the fashion of a spiral, made to execute a partial rotation, so that the two constituent root-bundles of the eighth or auditory nerve have undergone an almost complete transposition; the cochlear root lying to the inner, the vestibular root to the outer side, and the two crossing each other on arriving close beneath the ventral acoustic nucleus, where it can be seen, that the cochlear filaments traverse obliquely the thickness of the vestibular root and come into relationship with the ventral acoustic nucleus, which nucleus has remained in its normal situation below and to the outer side of restiform body. These particulars are all the more easily appreciable because the inner root is in great part degenerated, whether from the ventricular lesions involving part of its nucleus, or from the distinct vascular alterations over the ventral surface of the medulla which actually involve part of its fibres as they emerge from, or enter, the substance of the organ. Passing dorsally between the posterior expansion of the ventral acoustic nucleus and the restiform body, a few auditory filaments can be followed beneath the ventricular floor as far as the dorsal extremity of the raphe, where they dip forward, and decussate with similar filaments coming from the opposite lateral periphery, and derived from a nucleus highly irregular in contour, which is lodged in the very substance of the restiform body and which evidently represents the ventral acoustic nucleus of that side; these delicate decussating fibres being according to all probabilities the *striæ acousticæ*.

The lesions observed at this level.—To return to the part which ventricular lesions may have had in bringing about this peculiar malposition, it must be stated that the changes which the choroid plexus of that side present, are of sufficient intensity to have caused

decided disturbances of relationship. The plexus are found to be affected much in the same way as are the blood vessels of the leptomeninges of the base, i. e., they present marked thickening of their walls, decided proliferation of the endothelium which lines their ventricular surface, shedding of the same, which occurs as extensive plaques of edge-to-edge-cells lying free in the ventricular interspaces, occlusion of their lumina by red blood-cells and often by black spheric bodies. The cerebellar cortex neighboring upon these lesions presents peculiar alterations: the Purkinje cells, which, in the normal state, form a single layer between the molecular and the rust-colored or granular layers, are increased in number, especially at the apices of the folia, where they are disposed in rows of even three and four cells deep, and where, moreover, they are no longer sharply defined against the granular cells, but intermingle with the latter to such considerable extent, that some of them lie fairly deeply in the latter layer, while a fair number of granular cells advance beyond the border line dividing the Purkinje cells from the overlying molecular zone. The great majority of the Purkinje cells present great indistinctness of outline and take a more or less diffusely homogeneous stain, but their processes are still plainly visible.

A section taken at the level of the maximum development of the olivary bodies, shows that there is between these two structures an extreme disproportion as to size; one being almost rudimentary, while the other is apparently normal in every respect. The healthy olive is situated on that side, which, at higher levels (peduncle and pons), we have found to be the more normal, i. e., provided with both sets of transverse pontine (ponto-cerebellar or cerebello-pontine fibres, etc.) fibres, and which, actually, is the seat of the major disturbances (i. e., of the cerebellar anomaly just described). The rudimentary or atrophic olive appears on the side which, throughout the pons, is devoid of superficial transverse pontine fibres. As we examine methodically from above downward (peduncle-medulla), the entire series of sections of this case, we notice that one olive appears much later than the other, and again disappears much sooner; thus showing that it has a decidedly shorter vertical extent than its fellow. Again, is the disproportion between the transverse diameters of the two olives most clearly appreciable on any cross-section passing through both bodies. Whereas the healthy olive presents the usual single, mesially-situated hilus, the rudimentary olive (Pl. I, Fig. 3) presents at first, i. e., at its superior pole, a well-defined dorso-laterally directed hilus, which, at lower levels, disappears, while two entirely distinct hili develop at its ventral aspect, one being ventro-lateral, the other ventro-mesial; these in turn disappear, when a normally-situated mesial hilus comes into view at the exclusion of all others. The atrophic olive consists of a much narrower blade of gray matter than that of its healthy fellow, and in a general way this blade has a far more even outline, its infoldings are much less numerous and far more shallow; at certain points, it appears as a fairly broad and perfectly smooth ribbon of gray matter,

at others, it is markedly slender and distinctly convoluted. It is not surrounded by a well-defined capsule of nerve-fibres such as its fellow possesses. Its staining reaction is somewhat altered, whatever the stain employed. Although at the superior pole, the cerebello-olivary system can be followed from both olives to the restiform bodies, in the greater part of its extent, the atrophic olive is only very sparsely permeated by fibres, and, if it sends fibres to the opposite half of medulla, it must be said that no fibres can be traced from it to the formation lying dorso-lateral to it or to the homolateral restiform body.

The accessory olivary segments are clearly defined in connection with the healthy olive, but those of the atrophic body are scarcely appreciable except with the high-power, and even then, only the dorsal leaflet can be easily recognized.

A feature of particular interest at this level of the medulla, and best seen on a section passing slightly below that showing the entrance of the auditory radicular fasciculi, is the presence, just within the dorso-lateral periphery of the section, and on the same side as the above-described lesions and anomalies, of a small island of dentate nucleus, enclosed within the very substance of the restiform body. This body, it will be remembered, has been so to speak, bisected by the ventricular lesion; one segment remaining within the territory of the medulla, while the other has been wedged into the cerebellar angle and driven with it outward and forward along the lateral aspect of the brain-stem. This fact, i. e., this fragmentation of the dentate substance, affords additional proof that actual destructive lesions have occurred at the lateral angle of the fourth ventricle, involving mainly the dentate nucleus with its surrounding cerebellar folia and the restiform body; the latter, before it really leaves the medulla to pass into the cerebellum. Thus, an exchange of tissues has occurred between adjacent structures, a large segment of the restiform body having been driven *en masse* into the cerebellar hilus, while a small fragment of the corpus dentatum has become enclosed within the boundaries of the medulla—certainly a most curious transplantation of structures.

The floor of the ventricle at this level presents distinct evidence of well-marked lesions. The ependymal line dips in at various points, where its cells are decidedly increased in number, and a considerable number of small cavities, areas of local disintegration, are to be found scattered throughout the subventricular griesum; the lesions being most extensive at the lateral angle corresponding to the topographic disturbances just described. The fasciculi solitarii can be studied with advantage in this case, as the partial absence or degeneration of surrounding structures brings them prominently into view and renders it fairly easy to ascertain their various connections. Once the striæ acousticæ have entirely disappeared in the region of the raphe, after coursing beneath the ventricular floor from either dorso-lateral angle or tuberculum acousticum, one sees distinctly that the well-defined oval field of the respiratory bundles grows

progressively lesser in volume from above downward, owing to the constant unfurling of their fibres, which, leaving their field, course mesially towards the raphe, where they decussate and finally become lost in the general area occupied by the mesial lemniscus on either side of the median raphe.

Sections taken from still lower levels and corresponding to the transition zone between medulla and cord, present several points of interest. The gray matter about, and especially behind, the central canal is the seat of considerable alterations; it has a granular appearance generally and takes a very poor stain. In it, a number of blood vessels with thickened walls and occluded lumen may be seen, as well as occasional small cavities containing granular detritus and around which blood pigment and granular cells abound. These deep-seated lesions are most extensive in one dorso-lateral field of the central canal, where they invade the domain of the nuclei gracilis et cuneatus of that side, which presented, at a higher level, the peculiar anomaly of the corpus dentatum and auditory nerve-roots. These foci have destroyed the greater part of the nucleus cuneatus but involved only slightly the nucleus gracilis; distinct cavitory lesions having replaced almost entirely the former nuclear formation. Vascular changes are also present in the leptomeninges of the ventral periphery and of one lateral surface.

The most superior segments of the cervical cord present a practically normal configuration, as regards both the presence and relative disposition of the various structures entering into the constitution of this region. One notes however, the unusually small proportion of white matter, and that, although the gray matter predominates, its cells are few in number and their structural details very indistinct; this being especially true of the anterior horns, the multipolar nerve-cells of which are almost totally wanting on one side. The anterior columns are moderately and very diffusely degenerated. A more appreciable and more sharply defined area of degeneration is to be seen on either side, in the posterior field of the lateral columns and lying immediately in front of the tubercle of Rolando. It is somewhat more marked on that side which, at a slightly higher level, presented lesions in the domain of the end nuclei of the posterior columns.

Examination of sections through the cortex of the Rolandic region reveals well-marked lesions both in the meninges and in the cortical and subcortical substance. The meninges which dip into the sulci contain many occluded vessels; the subpial molecular zone is oedematous generally, presents a porous aspect and is permeated everywhere by vascular streaks radiating into it from the overlying pia. The limiting layer or marginal zone of the cortex is destroyed at almost every point and contains pearl-like agglomerations of spindle-shaped nuclei. Between it and the pia, as well as in the meshes of the latter, a pink staining gelatinous detritus is present, in which are imbedded a considerable number of bright-red refractive dot-like bodies, which suggest very strongly, nucleoli, or else, migratory neu-

rogliar nuclei. The subventricular zone shows a marked proliferation of the normally-existing neuroglial element, and appears as a broad dense band, finely-fibrillar in structure and very poor in nuclei. At several points, the ventricular lining is interrupted and occupied by patches of exudate, made up of granular debris, rests of endothelial cells, migrated glia-cells, shadow-cells, blood-pigment, etc. Vascular twigs whose lumina are literally choked with shadow-cells and granules of disintegration, are disseminated throughout the cortex and subcortex intervening between meningeal and ventricular boundaries. Both large and small pyramidal cells are markedly decreased in number, and the pericellular spaces more particularly of the glia cells, are considerably dilated though empty.

In the occipital lobe, the ventricular dilatation has been so extreme, that a frontal section of the lingual lobule has the form of a horse-shoe, the arms of which are represented by the calcarine and collateral segments of the lobule. The calcarine fissure is the seat of extensive meningeal alterations. The pia is almost everywhere loosened from the subjacent cortex, the interval being filled by a pink-staining and almost structureless gelatinous substance, containing very few nuclei and evidently representing disintegrated products. In the meshes of the pia itself, numerous blood vessels, the transversely-cut surfaces of which are superimposed one upon the other in close proximity, are to be seen; their walls are markedly thickened and formed of mature connective tissue lamellæ, and in all of them, the elastica is unusually prominent. The lumen of most of these blood vessels is occluded by densely-packed collections of shadow-cells, intermingled with which, black-staining granules are often to be seen. In between these vessels, i. e., in the meshes of the pia as well as in the perivascular spaces, the bright-red refractive dots above referred to are again to be found. From the pial mesh-work, thickened and obliterated vascular twigs penetrate, in many places, into the molecular zone of the subjacent cortex, which, itself has an oedematous and sievelike aspect, is loosely fibrillar in structure and contains fairly numerous glia-cells.

The cells of the calcarine cortex are, in a general way, much better preserved than those of the rolandic area, although their fine morphologic structure is likewise noticeably obscured. The entire cortex has a riddled or cribiform appearance from the presence everywhere of dilated pericellular spaces, which are found about all types of cells. The polymorphous cells of the fourth layer are unusually large and clearly-defined (perhaps are they truly modified forms of the glia-cell). The glia-cells are markedly increased in number especially in the third layer.

The ventricular surface of this region presents the same alterations, in a general way, as those observed in the motor area, only that they are several times more extensive. Along almost the entire length of one segment of the lingual lobule, the subventricular area has been involved to such extent by vascular lesions, that there has resulted a long linear cavity with irregular contours and which is

closely related to a longitudinally-cut arteriole whose walls are markedly thickened, and the lumen of which is filled with shadow-cells and degenerated particles. At certain points, the cavity is limited by wavy strands of neuroglial tissue and its lumen contains gelatinous-like material, fairly numerous glia-cells, shadow-cells, blood-pigment, fibrillar tufts, etc. Altered blood vessels and associated areas of rarefaction of the cortical and subcortical parenchyma, abound throughout this region, but are especially numerous in the ventricular segment of the section. There is a very decided atrophy of the centrum ovale occipitale, with relative integrity of the gray cortical substance.

Sections through the ventricular surface of the caudate nucleus show most extensive lesions. The ventricular floor is everywhere undermined and the lining ependymal cells involuted, forming irregular islands of cellular tissue, scattered throughout the much-thickened and densely-fibrillar subventricular neuroglia zone. In many places, they appear as annular or ring-like structures, the cavity of which is almost entirely closed and contains shallow-cells and detritus; they closely suggest the cross-section of a tubular gland. Intense vascular changes are here again most abundant.

The optic nerves and tracts present a most extreme degree of sclerosis, and contain practically no recognizable vestige of former medullated nerve-fibres, being constituted essentially by strands of connective tissue through which numerous blood vessels are distributed, more especially in the peripheral layers, i. e., beneath the pial covering.

CASE II.—E. T. C., female child, age at time of death fifteen months.

Clinical condition.—Microcephaly; cerebral diplegia. Cause of death, broncho-pneumonia.

Clinical History.—Condition of child on admission to St. Margaret's House (Child's Hospital) is described as follows in the hospital records: Small undersized, poorly developed infant. Appears like an infant of three months. Mental development retarded. Does not notice objects; has no responsive smile. Marked opisthotonos. Back of head flat; no cranio-tabes; no enlarged epiphyses or rachitic rosary. Anterior fontanelle open and measures one centimeter by one centimeter. Head small, marked microcephaly. No facial phenomenon. Upper extremities poorly developed and in a condition of rigidity. Right relaxes at times, and frequently a spasm occurs, in which the hands are tightly clenched and the forearms extended and supinated. These spasms are accompanied with pain and can be elicited by pressure on the brachial nerve. Lower extremities stiff and feet crossed. Child moves the legs, and at times this stiffness is relaxed. Reflexes greatly increased. During the spasms, the head is forcibly retracted and the child is soon in a position of opisthotonos. Repeated spasmodic attacks. The muscles of the scapular region and back are markedly hypertrophied. An ulcer on the fraenum linguae resists all treatment. Child refuses all food.

The above clinical picture resembles in many respects true tetany, and was diagnosticated as such when the child was first seen before entering the hospital. Even for some time afterwards, much doubt was entertained as to the true nature of the condition, so closely did the majority of the manifestations resemble those characteristic of tetany. It was mainly on account of the duration of the affection and the more or less persistent character of the rigidity, with absolutely no remissions during which all phenomena disappeared, that the diagnosis of an organic cerebral lesion imposed itself.

Broncho-pneumonia developed about one month after child's admission to the hospital and proved fatal.

Autopsy by Dr. Stanton, December 20th, 1904. Autopsy No. 0-813. Born September 1, 1903; died December 20, 1904.

Clinical. Diagnosis.—Spastic infantile paraplegia with tetanoid convulsions and idiocy.

Gastro-intestinal tract apparently negative.

Central nervous system: Meninges negative.

Brain.—Weight 520 grammes. Convolutions sharp and well-defined. In the motor region on both sides, they are small and distinctly atrophied. Cerebrum is everywhere firmer than normal and especially in motor area on both sides, where it has a firm elastic resistance. Section shows decrease of gray matter in convolutions of the motor area with distinct relative increase of white matter. Cord is very much firmer than normal. On section, anterior median fissure is apparently more prominent than normal. Central canal easily recognizable. Relative proportion of gray and white matter apparently normal. On the under surface of the periosteum of the upper dorsal and lower cervical vertabræ, is a soft reddish gelatinous exudate from one to one and five-tenths millimeters in thickness.

Anatomical Diagnosis.—Diffuse sclerosis involving white matter of cord and motor convolutions of brain. Hemorrhagic periostitis involving periosteum of vertebral arches.

Microscopic Diagnosis.—Extreme congestion of epidural fat of upper dorsal and lower cervical region.

DESCRIPTION OF HISTOLOGIC APPEARANCE AND LESIONS OF THE BRAIN AND CORD.

Serial sections of the entire brain-stem, sections taken from the first, fourth and eighth cervical, the first, sixth and tenth dorsal, the first and fourth lumbar, the first and third sacral segments of the spinal cord, as well as sections from the cortex of the rolandic convolutions, the paracentral lobule and the calcarine fissure have been subjected to microscopic study. Sections were stained according to the methods of Weigert, Pal, van Gieson, with hematoxylin and eosin, etc.

In this series of sections, the only appreciable disproportion between the two lateral halves of the brain-stem is to be seen in the region of the mid-brain or cerebral peduncles, and is in no way,

the result of faulty section; the brain-stem, generally, was well-formed and moreover well-preserved, and the original sections passed through perfectly symmetric regions on both sides, i. e., as far as could be judged from naked-eye appearances.

Most of the sections passing through the superior and middle portions of the mid-brain, show that the various tracts of fibres and nuclear collections are all present, and likewise, for the most part, well-defined. But on closer study of sections taken from any level of the peduncle, it is seen that one pes pedunculi and more especially one red nucleus, are decidedly atrophic; their volume being strikingly inferior to that of their homologous structures. These atrophies are crossed and not homolateral.

The atrophy of one of the nuclei rubri constitutes the feature of predominating interest; the affected nucleus being less than half the size of its fellow, devoid of its usually well-defined capsule (formed by the convergence of great numbers of medullated nerve-fibres) except along its mesial aspect, and otherwise encircled by a markedly degenerated annular zone. The lateral field of the tegmentum situated to its outer side is decidedly pale and degenerated. The outer segment of the capsule of the relatively healthy nucleus ruber, shows likewise at lower levels, considerable discoloration, which gradually advances from the dorso-lateral area—its point of entrance.

The fasciculi longitudinales posteriores are unusually well-defined throughout the peduncular region. In the lower regions of the mid-brain, a gradual readjustment of symmetry takes place, and once we consider sections passing beneath the red nuclei and through the decussating field of the brachia conjunctiva, a distinct disproportion between the homologous structures of the two sides is no longer appreciable. There still remains, however, a considerable pallor of the tegmentum of that side on which it was noted above, and the area bordering on either side of the raphe (the domain, in part, of the mesial-lemnisci and brachia conjunctiva), presents an appreciably poorer-staining property than in the normal state.

Vascular lesions are distinctly to be seen in this region of the brain-stem; being situated for the most part in the leptomeninges covering the ventral surface and sides of the peduncles, as well as in the ependymal lining of the Sylvian aqueduct. At the ventral border, the lesions occupy the receding interpeduncular angle and spread laterally on either side along the free ventro-lateral border of the crura. At one point, a very much altered and occluded blood vessel, cut in its long axis, appears within the deep substance of the peduncle, located alongside the raphe and in close proximity to the red nucleus, which, at higher levels, we have found to be the more normal of the two. By following this blood vessel on the sections lying immediately above and below that under consideration, we find that it stands in relation with the meningeal vascular changes of the ventral periphery; smaller lesions fill in the gap between the two foci, thus forming an uninterrupted line of alterations which stretches across the entire antero-posterior diameter of the ped-

uncular region at its mesial line, and dipping in posteriorly between the two cellular areas representing the oculo-motor nuclei. It is probably this lesion, which, by interrupting a large number of conjunctival fibres at the moment of decussation, and before it had gone very far, has determined the decided atrophy and extensive discoloration of one of the red nuclei as was previously noted. Bearing in mind the exact seat of this lesion, i. e., close to the mesial border of one red nucleus, it is of course obvious, that the red nucleus of the opposite side should be that which has suffered most, as the fibres which surround it on all sides have been severed just at the point where they come closely together to decussate; whereas, only a minimum number of the fibres of the homolateral red nucleus have been involved, having already decussated and spread out fan-shaped to embrace their nucleus from all directions (in other words, many of these fibres have already reached a point beyond the seat of lesion). Such is the probable explanation of the fact that degeneration in the healthier red nucleus is confined to the dorso-lateral segment of its capsule.

The vascular lesions of the ventral periphery are well-marked; the blood vessels of the pia, cut either transversely or obliquely across, presenting markedly thickened walls and their lumen being filled with a mixture of shadow-cells and black spheric bodies having a granular appearance and probably representing products of degeneration. The lesions in this situation involve the emerging filaments of the oculo-motor nerves. Analogous vascular changes are also present at various points in the substance-proper of the mid-brain, and in the perivascular sheaths of many of the intra-peduncular vessels are to be seen desquamated endothelial-cells, granular bodies and detritus, small amounts of blood-pigment, etc. At a number of points along the floor of the Sylvian aqueduct, proliferation of the lining cells has occurred, and a fair number of tubular ependymal recesses dip down into the subjacent tegmentum.

Sections through the pons Varolii reveal but very few and very slight departures from the normal aspect. The various tracts of fibres stain about equally well on both sides, but all of them on either side, do not to the same degree, i. e., there is apparently a bilateral degeneration of certain fasciculi. In the ventral segment of the pons on either side, there is a diffuse and moderate degeneration of the cross-sectioned bundles of corticifugal fibres contained between the two sets of transverse pontine fibres; it is more appreciable on either side of the raphe and in the mesial and dorsal field of this region, therefore, in the domain which most anatomists actually regard as belonging to the pyramidal fibres derived from the motor cortex. An appreciable though mild discoloration of the field occupied by the mesial lemnisci is likewise to be seen; it is distinctly more marked on one side.

A feature of interest at this level, although of no immediate importance to us in the study of the problem actually under consideration, is the unusual distinctness with which the connections between

the abducens nuclei and the superior olives, as well as the relations between the trigeminal nuclei and radicular filaments and the cerebellum, can be made out.

Meningeal lesions characterized by the presence of thickened and occluded blood vessels are present at different points along the ventral periphery, and extend over the anterior half of one lateral border of the pons. The process also invades the substance-proper of the organ, but is practically confined to the marginal zone; apparently implicating nothing more than the superficial transverse pontine fibres. Slight vascular changes are occasionally seen on both sides of the median raphe and in the domain of the mesial fillets. Slight lesions of the choroid plexes exist at various points along the floor and in the lateral recesses of the fourth ventricle; in a few places these alterations are well-marked.

In the medulla, the topography and extent of degeneration become much more clearly appreciable and sharply defined. Both pyramids are decidedly atrophic and considerably degenerated, one slightly more than the other. Both mesial fillets are likewise markedly degenerated, more so perhaps than the pyramids, and certainly in a more even degree. In both pyramid and lemniscus, on either side, the degenerative sclerosis is diffuse and involves to the same extent every part of each structure, i. e., it is not segmentary in any way. The degeneration of the lemnisci is a feature which is all the more prominent at this level, because both areas occupied by the posterior longitudinal bundles (and which, in the medulla, are simply the dorsal continuation of those in which the lemnisci are situated) are perfectly intact; the contrast is therefore striking, on Weigert-Pal stained sections, between the irregularly triangular, deep-staining bundles lying at the ventricular end of the raphe, and the markedly discolored, elongated, spindle-shaped mesial fillets, situated immediately ventral to them and extending forward as far as the pyramids,

The field lying dorso-lateral to the olive on one side, is distinctly discolored in comparison to the corresponding area on the opposite side; it practically corresponds to the domain attributed, in this region of the brain-stem, to the tractus spino-cerebellaris ventralis (antero-lateral ascending tract of Gowers).

Lesions are not wanting in the medulla and are to be seen in several places. At the ventral border of one hemi-bulb, a small, oval, distinctly destructive lesion is seen, which involves the ventral leaflet of the inferior olive and the overlying antero-external arcuate fibres; this lesion is probably responsible in part, for the lateral degeneration just referred to. Vascular alterations are observed all along the ventral periphery, in the anterior median fissure and over one lateral border of the section. Very distinct lesions are also present along the floor of the fourth ventricle and more especially about its lateral recesses. These ventricular lesions are most marked at the inferior angle, where the cavity narrows down to become converted into the central canal of the spinal cord. At this point of transition, a peculiarity to be noted is, that once the central canal

has advanced fully one-third the distance between ventral and dorsal boundaries into the depth of the organ, it is not closed posteriorly; extending first dorsally as a narrow channel, which then dilates, forming a sort of ampulla which is at least three times the size of the canal proper and reaches the dorsal periphery of the section. About this posterior prolongation, and especially on one side, small cavitary lesions may be seen in the central griseum, which extensively involve the domain of the nucleus gracilis and slightly invade the proximal area of the nucleus cuneatus. On sections taken at the level where the sensory decussation begins, these central lesions are present on both sides and fairly numerous; extending more or less into the territory of both nuclei graciles and intercepting a fair number of internal arcuate fibres. The latter fibers, especially those which take their origin from the internal or mesial two-thirds of the general cellular area occupied by the nuclei of the posterior columns, are distinctly, even markedly, degenerated. The whole dorsal segment of the medulla at this level is irregular in outline and caved in, and in the overlying leptomeninges, thickened and thrombosed vessels abound; some are also found in the dorsal marginal zone of the medulla-proper and are surrounded by small foci of extravasation and deposits of blood-pigment. Vascular changes are likewise to be seen, in some of the sections, about the raphe and in the interolivary field, as well as along the whole antero-posterior extent of one lateral marginal zone, where an appreciable discoloration has resulted owing to the implication of a considerable number of fibres. At this level, as well as in the lower sections, the diffuse and fairly marked degeneration of both pyramids is most distinct. The descending trigeminal fasciculi are likewise decidedly discolored. Meningeal lesions exist throughout the series of bulbar sections; being situated more particularly over the ventral surface and extending along the greater part of one lateral border.

At the level of the motor crossway, there is a fairly well-marked degeneration of the ventral two-thirds of both columns of Goll, as well as of the marginal zone of both antero-lateral columns; the deeper portions of these columns which border upon the anterior horns being relatively normal and therefore in striking contrast to the peripheral discoloration. The mass of fibres actually engaged in decussation appears degenerated generally. Throughout the cervical region (Pl. II, Fig. 4), the area of degeneration occupies the domain of both direct, and both crossed pyramidal tracts, one of each of which is more involved than its fellow of the opposite side, and the two lying in the same lateral half of the cord; showing that in the production of the pyramidal degeneration, other factors besides the lesions of the cerebral hemispheres have been concerned. The domain of both prepyramidal, both antero-lateral ascending, both descending trigeminal and part of one direct cerebellar, tracts, is likewise distinctly degenerated. The whole degenerative process is distinctly more marked on one side than on the other. In the columns of Goll, the degenerated area rapidly loses in both intensity

and extent. Throughout the superior and mid-dorsal regions, the most extensive degeneration occupies the territory of the crossed pyramidal and Lissäuer's tracts on either side. The discoloration in the other areas above-noted, though still appreciable, is much less marked. The anterior and posterior nerve-roots are considerably degenerated. The fibrillar network of the vesicular column of Clarke outlines the topography of this cellular formation with remarkable distinctness throughout the dorsal cord. In the upper lumbar region, the degenerative sclerosis is much reduced in intensity, and is practically confined to the domain of the crossed pyramidal tract and posterior root-zone on either side. The nerve-roots at this level are but very slightly degenerated. In the sacral region, the area of degeneration is very well-defined and almost entirely marginal, occupying more particularly the posterior half of the peripheral zone of both lateral columns and both posterior root-zones.

Lesions, both intra and extramedullary, abound along the whole extent of the cord. The meningitic process, represented by a marked increase in the pial connective tissue, the blood vessels of which present greatly-thickened walls and an occluded lumen, and by remnants (blood-pigment, fibrillar shreds, granular cells) of a former exudate, is generalized, but is by far more marked over the posterior surface of the cord. There is an associated interstitial radicular neuritis, which, again, is much more intense in the posterior nerve-roots, and which explains, in part at least, the widespread sclerosis of the nerve-roots previously noted.

Throughout the cord, but more distinct in the dorso-lumbar (Pl. II, Fig. 5) region, is an appreciable dilatation of the central canal, which, in the sacral segments, becomes even well-marked. It was distinctly visible with the naked-eye, wherever a fresh cross-section was made, so that one could speak of it as hydromyelia, although slight in degree. The structure of the walls of this canal is most distinctly seen to consist of a single row of very regularly-disposed columnar ependymal cells. The lumen of the canal is almost everywhere perfectly free, or else contains but the minutest traces of exudate. The surrounding neuroglial zone is decidedly increased in breadth, and has an essentially fibrillar structure with only a slight proportion of cellular substance.

Areas of perivascular parenchymatous rarefaction, or actual foci of myelomalacia, are disseminated throughout the central gray matter of the cord. In the cervical region, they are found more particularly about the central canal, involving the intermediate gray matter, the lateral horns, the basal and postero-lateral segments of the anterior horns and the domain of the anterior commissure. These areas are always in relation with pronounced vascular alterations; in close proximity to blood vessels having markedly-thickened walls, an occluded lumen, and the perivascular spaces of which are enormously dilated and partly filled with shadow-cells, blood-pigment, granular bodies and detritus, and into which a fair number of glia-cells have migrated. In some places, the vessel-wall is interrupted and rem-

PLATE II

To Illustrate Drs. Archambault and Baldauf's Article on "A Contribution
to the Pathogeny of Spastic Rigidity of Childhood."

Albany Medical Annals, January, 1908.

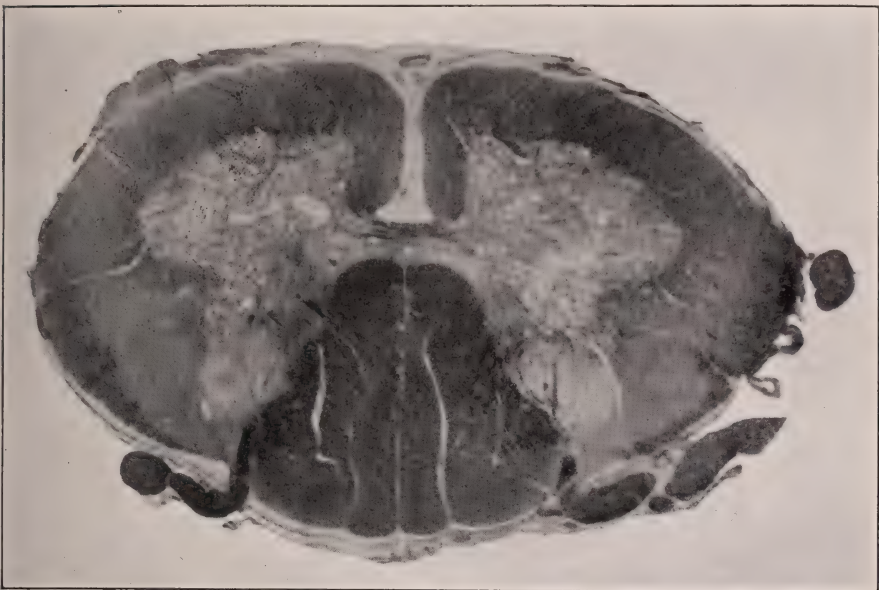


Fig. 4

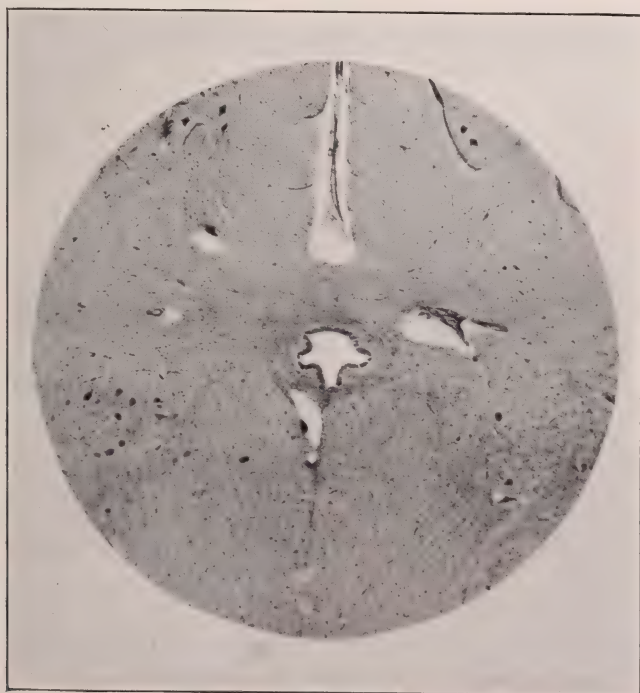


Fig. 5

nants of former miliary hemorrhages are to be seen, or else, actual cavities mark the site of the destructive process. At the level of the seventh and eighth cervical segments, larger lesions of a similar character are situated at the base of one posterior horn, which is for the most part destroyed, as well as the surrounding substance of the intermediate gray matter; the base of the anterior horn being involved only to a very limited extent. The whole process resembles most closely that of poliomyelitis anterior acuta in its later and stationary stage. The multipolar nerve-cells of the anterior horns are in a general way quite well-preserved. Similar lesions are found throughout the dorsal and lumbo-sacral regions, where they surround on all sides the vesicular column of Clarke without actually involving it to any appreciable extent, except at a few levels, where it is decidedly implicated.

The cortex of the Rolandic and calcarine regions shows everywhere most distinct alterations. Meningeal changes are present, consisting in marked thickening and round-cell infiltration of the pia, thickened and obliterated blood vessels in the perivascular spaces of which, as well as in the meshes of the pia, large numbers of granular bodies are to be seen. The molecular zone of the cortex is rarefied, presents a clouded and porous aspect, and is strikingly poor in tangential fibres. The large pyramidal-cells are moderately reduced in number, but their finer structural details are markedly inappreciable. The neuroglia meshwork and glia-cells are distinctly increased in their proportion to the parenchymatous structures. Throughout the cortex, vascular lesions and miliary cavities are distinctly visible.

RESUMÉ AND INTERPRETATION OF THE SECONDARY DEGENERATIONS, ATROPHIES AND FAILURES OF DEVELOPMENT OBSERVED IN EACH CASE.

In Case I, there is a moderate and diffuse degeneration of both pyramids; a degeneration of both mesial fillets, total on one side, partial on the other; a total degeneration of one lateral fillet and of one set of antero-external arcuate fibres; an incomplete but marked degeneration of both sets of internal arcuate fibres. There is a marked atrophy of one olive and one corpus quadrigeminum posterius, and a generalized atrophy of one-half of the brain-stem. There is total absence of one set of superficial and deep transverse pontine fibres, and of lateral half of the valve of Vieussens.

The degeneration of the pyramids is due to the numerous foci of perivascular disintegration situated in the overlying meninges, about the raphe, and even within their own territory at various levels throughout the brain-stem. The degeneration of the internal arcuate fibres on both sides, of one mesial fillet and one set of antero-external arcuate fibres, is in direct relation to the pericanalicular destructive lesions of the lower medulla, which involve the central gray matter situated in the middle line and in the domain of the nuclei gracilis

et cuneatus of one side. The total degeneration of one mesial fillet in the ponto-peduncular region is merely the result of its actual involvement at the level of the extensive lesions previously described; it being in part reconstituted, as we have seen, in lower regions. The total degeneration of one lateral fillet is in relation with the extensive lesions involving the contralateral acoustic nucleus and tuberculum acusticum, and which at the same time, explain, the consequent atrophy of the related corpus quadrigeminum. The marked atrophy of one olive is due to the segmentation and partial destruction of the heterolateral restiform body. It is well to state in this connection, that the process which this olivary body exhibits, is distinctly an atrophic and not a degenerative one, properly speaking; a fact which would tend to show that the so-called cerebello-olivary tract is derived, in good part at least, from the olive and not exclusively from the cerebellum. The hemi-atrophy of the entire brain-stem is evidently in direct relation to the extensive lesions, situated, throughout the pons and medulla, about the lateral angle of the fourth ventricle on the opposite side. The crossed relation between the various segments of the brain-stem and the cerebellum, as well as the important share which the connecting systems have in the constitution of the brain-stem, are facts so well-known, that the mechanism of this hemiatrophy hardly needs further discussion. The absence of one-half of the valve of Vieussens and of one brachium pontis, is the result of their actual implication in the various destructive processes observed both about the ventricular floor and along the ventrolateral periphery of the ponto-peduncular region.

In Case II, we note an appreciable degeneration of both pyramidal tracts throughout their course, as well as of both mesial fillets; a fairly marked degeneration of both antero-lateral ascending tracts; a very extensive degeneration of the descending trigeminal fasciculi below the level of the sensory decussation; a discoloration of the prepyramidal area in both lateral columns of the spinal cord. There is likewise, a very marked atrophy and degeneration of one red nucleus, the source of which we have already sufficiently exposed. The degeneration of the motor tracts is evidently the result of the cerebral sclerosis which was well-marked in this case; but, in the spinal cord, the area degenerated in either lateral column far exceeds the proportions ascribed by classic authors to the territory of the crossed pyramidal tracts, and we are of the opinion that other degenerated tracts contribute to the topography of this uncommonly large field of sclerosis. The lesions observed between the red nuclei and upon which we have particularly insisted, involve the exact seat of decussation of the rubro-spinal tracts, described by von Monakow. These tracts, one for each side, take their origin in the red nuclei, decussate in the median raphe, course through the pons and medulla where they occupy the antero-lateral segment of the formatio-reticularis, and in the cord are situated immediately in front of the crossed pyramidal tracts, finally terminating, in part at least, like the latter, about the multipolar nerve-cells of the anterior horns. So

far and to the best of our knowledge, the existence of this tract has been positively demonstrated only in the lower animals; without making any assertion with regard to the fact, it seems to us that the actual observation is quite favorable to the hypothesis that the rubro-spinal tract exists likewise in man.

The degeneration of both mesial fillets (more marked on one side) and both descending trigeminal fasciculi in the spinal part of their course, is entirely referable to the bilateral and extensive changes situated in the domain of the nuclei of the posterior columns and which we have fully described in connection with the histologic appearance of that region. The unequal but bilateral degeneration of the antero-lateral marginal fields of the upper dorsal and cervical cord, is the result of the well-marked vascular changes observed about the intermediate gray matter and the proximal portion of the anterior and posterior horns. The sclerosis is probably not limited to the tract of Gowers, but all that our actual knowledge of the anatomy of this region permits to state, is that degeneration of this tract on both sides is unquestionable.

RESUMÉ OF THE LESIONS COMMON TO BOTH CASES AND DISCUSSION OF THEIR ANALOGY WITH THE LESIONS OF TETANY.

Although internal hydrocephalus and cerebral sclerosis are entirely distinct pathologic entities, the respective constituent lesions of which have nothing in common, not only with each other, but also with the lesions described in connection with tetany, it must nevertheless be stated that in both cases actually under consideration, well-characterized changes exist, which do not form part of the process associated with the determination of either internal hydrocephalus or cerebral sclerosis; or, if they do (which, in our belief, is not improbable), mention of them is still wanting, to the best of our knowledge, in the classic description of these morbid entities. These additional lesions which are identical in both cases, are likewise identical, or almost so, with many of the changes described in tetany.

The accessory changes to which we have reference may be briefly summarized as follows:

(a) Vascular and interstitial changes, occurring more especially in the leptomeninges of the brain-stem and spinal cord (available in one case only) and about the structures forming, or neighboring upon, the limiting walls of the Sylvian aqueduct, the fourth ventricle and the central canal of the spinal cord; occasional foci also existing in the substance proper of these organs. These changes consist in marked thickening of the

walls more especially of the medium-sized and smaller blood vessels; partial fibrous obliteration of a few, cellular occlusion or thrombosis of many, of them; perivascular dilatation and distinct evidence of chronic fibrous leptomeningitis and ependymitis; marked thickening of the sub-pial and peri-ependymal neuroglial layers.

(b) Parenchymatous changes, situated for the most part in the vicinity of, and certainly partly dependent upon, the lesions included in the first group, disseminated throughout the central griseum of the brain-stem and spinal cord. These alterations are represented by various types of cellular degeneration and vary considerably in intensity from one level to the other; including all degrees of simple atrophy and cloudy swelling, loss of pigment or of the nuclear and nucleolar elements, distortion of contour and even total disappearance of the ganglion-cells. We are excluding, of course, the nuclear changes resulting from actual implication of the gray matter in the destructive ventricular lesions which were observed in both pons and medulla (as for instance, the extensive involvement of the acoustic nuclei, the nucleus cuneatus).

It is interesting to note in this connection, that in both cases, the nuclear lesions are practically confined (with the exception of the acoustic nucleus and tubercle, extensively involved in one case) to the same structures, namely: the nuclei of the posterior columns, the nuclei of origin of the oculomotor nerves, the nuclear field ventral to and between the nuclei rubri.

In drawing points for comparison between these various lesions and the changes described by most observers in connection with tetany, we notice, in the first place, that either category of changes just described has been advanced as representing the underlying anatomic cause of the tetanoid manifestations; the parenchymatous by the majority, the vascular and meningeal by a few, of the authors.

As regards first the latter class of lesions, which were well-marked in both our cases, it will be remembered that absolutely similar findings were described by Langhans, and especially by Pick, in one of whose cases, it is true, there existed clinically an associated epilepsy.

As regards secondly, the former category of lesions, that is, the parenchymatous changes, one glance at the synopsis of the actually recognized pathological anatomy of tetany given in the

first part of this article, suffices, to show that all the changes therein specified are abundantly illustrated in our actual observations and fully represented in the above given summary.

The lesions of the spinal cord, which we had occasion to thoroughly investigate unfortunately in one case only, exhibit in the most striking fashion, the closest analogy with those described more particularly by Bonome and Cervesato. Similarly to these observers, we found areas of parenchymatous disintegration in the central gray matter, which, in some places, had resulted in the production of actual cavities, or had been replaced by newly-formed neuroglial tissue, appearing as a meshwork of very fine, delicate and beaded fibrillæ possessing remarkably poor staining properties. These rarefied areas closely resembled in every respect the process observed in poliomyelitis, as has already been discussed. Although disseminated throughout the cord, these various changes were most pronounced in the lower cervical and in the lumbo-sacral segments; with distribution corresponds to the topography of the lesions observed in tetany. As in the case reported by Weiss, the maximum implication of the anterior horns is seen in the lower cervical segments and involves mainly the lateral cell-group, although the process does extend to the intermediate gray matter and even to the base of the posterior horn.

The lesions observed in tetany were found mainly in the spinal cord, and again more especially at the level of its cervical and lumbar enlargements; but a fact not to be forgotten and which can certainly find application in this particular instance, is, that many observers, anticipating the presence of lesions the seat of which they had based on clinical calculations, either examined the cord alone or else even limited their investigations to the cervical and lumbar regions. In the cases observed and well-described by Ferranini, the changes were most pronounced in the medulla and in the cervical cord; in the lower region of the spinal cord, they were especially prominent in the vicinity of the vesicular columns of Clarke and were often situated in territory presenting vascular disturbances. The latter details were unusually distinct in our own observations as will be remembered.

The pachymeningitis and interstitial neuritis described by Peters, were present in our Case II; mention of the former being made in the autopsy record which precedes the histologic description of this case and in which the latter lesion is more fully

considered. As in this author's observations, the changes were found more especially in the lower cervical and upper dorsal regions; but the neuritic process was not confined to the extramedullary segment of the spinal nerve-roots, involving the intramedullary portion as well. It is well to state however, that in Case VII reported by Peters, extravasations in the course of the *arteria spinalis anterior* were observed, as well as degenerated foci in the posterior horns; lesions which were present in Case II herein reported and upon which we have dwelt sufficiently already. Peculiarly enough, as we glance over all the facts brought out by this comparative analysis, we find that the joint-lesions of our two cases include practically all the changes described in tetany by the different authors whose observations are on record.

As regards further points of comparison between the cases of tetany, which we have analyzed and our present observations, the fact should be mentioned that in two out of the seven cases reported by Peters, a marked internal hydrocephalus co-existed, and the gray matter beneath the floor of the fourth ventricle was the seat of distinct vascular changes: perivascular agglomerations of multinuclear leucocytes, even hemorrhages between ganglion-cells. Both these cases, in our opinion, can hardly be classed under the head of tetany, and we have grave doubts as to whether in these cases, the clinical manifestations were not the result of the ventricular lesions. The author states moreover, that he found by lumbar puncture an increase in the amount of cerebro-spinal fluid in most cases of tetany; a fact which we consider to be fairly good indication that choroid, that is, ventricular changes, though slight perhaps, existed.

Marfan, among others, has called attention to the peculiar tetanoid syndrome induced by internal hydrocephalus, and designated these cases by the term "tetaniform rigidity." D'Espine reported similar instances under the name of "pseudo-tetanus."

Coming back to our original proposition, namely, the ease with which the spasmodic affections, of cerebral origin, of infancy and early childhood are confounded with true tetany, which, thus far, is considered to be associated with lesions situated essentially in the spinal cord—it seems to us that the anatomic reason of this clinical difficulty has become plainly evident.

We have seen first, that the lesions described in connection with tetany, whatever diversity there existed between the different observers as regards both the seat and intensity of these

changes, were, in almost every respect, analogous to those associated with the various forms of cerebral palsy of childhood.

In the next place, we learned that cellular and interstitial alterations absolutely similar to those ascribed to the anatomic substratum of tetany, were capable of being determined by a whole series of toxic substances, so that, the primary factor concerned in the etiology of this disease was unquestionably some poisonous principle of varying character and derivation, freely circulating in the system; a view, moreover, which is rapidly becoming universally adopted.

In order then, to fully harmonize these various facts and to substantiate our hypothesis that the anatomic mechanism of the symptom "spastic rigidity" common to both tetany and cerebral palsy in childhood, is identical in both, there remains but to show that the latter affection is itself of toxic origin, and to explain the difference (only partial however) in the topography of the lesions in the two diseases.

As regards the toxic origin of the various lesions observed in cases of cerebral palsy, it hardly seems necessary to recall: the results of the investigations of such authorities as: Strümpell, Benedikt and Vizioli, Marie, Batten, who have demonstrated that an infectious encephalitis is, in many cases, the initial underlying process; the not infrequent association of hereditary syphilis brought out by Erlenmeyer, Osler, Koenig, etc.; finally, as regards those cases whose onset is extrauterine, the so frequent occurrence of cerebral palsy following the various acute infectious diseases of childhood.

As to the divergence between tetany and cerebral palsy with regard to seat of lesion, we maintain that it is only partial, more apparent than real. The existence in the former of lesions of the brain-stem has already been referred to, and more careful and exhaustive investigation in the future will probably furnish additional instances. The changes in the nervous system in the latter affection moreover, are not confined to the brain and brain-stem; medullary lesions have been described by a number of authors. They were very distinctly present in the cases herein reported. Then, the very different circumstances under which tetany and the congenital forms, more especially, of cerebral palsy develop, must play some part in the determination of the seat of lesion; it would seem that the mere question of gravity might have some influence in localizing over the hemispheric con-

vexity, the processes which take place during the latter months of gestation.

More important than differences in topography, are the very appreciable differences in intensity, which exist between the changes underlying the manifestations of tetany and those associated with the more severe clinical picture of cerebral palsy; and here there would be abundant room for further discussion. In attempting to explain even this major point of divergence, however, we shall confine ourselves to the following remark: if well-marked cellular and interstitial changes are produced by poisons in extra-uterine life, how much greater are not their chances of occurring in intra-uterine life, and how much more intense will they not be in the latter case, the toxic agent acting, as it does, during the very initial stage of development upon delicate struggling cells, and furthermore exercising its dwarfing influence uninterruptedly during the entire later course of gestation?

ANATOMO-CLINICAL CONCLUSIONS.

1. A large number of toxic products, whatever may be their nature and origin, are capable of producing cellular and interstitial changes in the parenchyma of the central nervous system. Many of them are susceptible of further giving rise to tetany of a more or less complete type. They do not necessarily do so, and those which most frequently are associated with the development of tetany, are not so under any or all circumstances. There is here, probably, a question of degree both in the intensity and in the duration of the irritative process, as well as one of variation in the susceptibility or resistance of the individual.

2. Tetany actually possesses probably no characteristic anatomic substratum; the lesions regarded as pathognomonic of it, merely representing the reaction of nervous parenchyma to the irritating influence of an existing toxemia. The changes may take place without determining tetanoid manifestations, just as the latter are capable of developing in the absence of any appreciable alteration of the central gray matter; which, however, is not proof positive that some changes do not exist. Our actual methods may simply be inadequate to their detection.

3. Spastic rigidity, whether symptomatic of some well-defined nervous affection or appearing as an isolated clinical manifestation, is the result, in our estimation, of a vitiated or disordered

innervation of, or impulse-transmission to, the peripheral motor neuron; which may be dependent either (a) upon irritation or partial (not complete) destruction of the central motor neuron, in any part of its course from the Rolandic cortex to its point of arborization about the multipolar nerve-cells of the anterior horns of the spinal cord; or, (b) upon inhibition or loss of function of the coordinating centers of the spinal cord, situated in all probability (the fact not being yet proved although admitted almost universally as most probable) in the intermediate gray matter. The latter mechanism is realized in tetany, being given the seat of lesion, which, it will be remembered is in the central gray matter, involving to a greater or lesser extent the anterior horns, but never completely so. Such a lesion by destroying certain groups of cells would interfere with readjustment of stimuli, which would then react, unmodified and improperly qualified, upon the anterior motor groups. In other words, the various peripheral stimuli entering by way of the posterior nerve-roots, would be continued by means of the various reflex and other collaterals uninterruptedly into the immediate pericellular fields of the multipolar nerve-cells, and might even be intensified if the conducting collaterals traversed areas where they were subjected to irritation. Moreover, in such cases, involvement of the terminal ramifications of the central motor neuron, just previous to their contact with the multipolar nerve-cell or its dendrites, would be very easily realized. Extra-medullary or meningeal lesions may, under certain circumstances, disturb the normal transmission of impulses sufficiently to produce the same phenomenon; probably less of themselves, than on account of the secondary disturbances which they determine in the cord (compression, vascular disorders, etc.).

4. Spastic rigidity may be either very marked or very slight, with all intermediate degrees of severity; likewise, it may be either continuous or paroxysmal. In order to interpret the mechanism of production in each case, it is not necessary to invoke duality of lesion. Personally, we are of the opinion, that in its relation to variations in the severity and in the duration of the clinical symptom which it determines, the lesion exhibits directly proportionate variations both in intensity and in extent. We would readily conceive that an actual focus of myelomalacia, or a progressive sclerosis, would give rise clinically to persistent phenomena, whereas transitory vascular disorders like conges-

tion and œdema, would produce equally transitory or paroxysmal manifestations, the repetitions of which would be as irregular in every respect as we know the underlying circulatory disturbances to be.

5. Not much lesser in importance than the meningeal localization, as a seat of lesion likely to produce spastic manifestations, is the central griseum surrounding the Sylvian aqueduct, the cavity of the fourth ventricle and the central canal of the spinal cord. The effect of irritative meningeal processes is pretty generally admitted, but the similar influence of ventricular or periventricular lesions has not yet gained, we believe, the full recognition which it deserves.

6. Internal hydrocephalus, unapparent or inappreciable clinically is not particularly uncommon in infants and young children. Why it should not in certain instances produce the characteristic enlargement of the head, when, as is often the case, the ventricular dilatation is extreme, and although the fontanelles are still open and the sutures unossified, is not clear; no plausible explanation has yet been furnished of this singular pathologic anomaly. Such cases are naturally difficult of diagnosis, and the frequent occurrence of marked optic changes and often of local manifestations as well, leads usually to the diagnosis of cerebral tumor. When this group of symptoms presents in children under one year, however, the possibility of a latent internal hydrocephalus should always be considered.

COLLATERAL OR EXTRINSIC ANATOMIC CONCLUSIONS.

1. A fair proportion of the fibres which enter into the constitution of the cerebello-olivary system take their origin from the inferior olive.

2. The constituent fibres of the brachium pontis, as could be seen from the foregoing study of an instance where this structure is absent on one side, follow a course, from above downward, which is analogous to that of the fibres of the middle segment or body of the corpus callosum. That is, they do not associate symmetrically placed territories of the pons and cerebellum.

3. Although not conclusively demonstrable simply from the actual observation, we may assume the probable existence in man of the rubro-spinal tract of von Monakow.

4. The presence in the root-fasciculi of the auditory nerve of a certain proportion of fibres derived from the central acoustic nuclei, would seem extremely probable from the study of Case I.

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BRAIN ABSCESS IN RELATION TO SUPPURATIVE
MENINGITIS, WITH REPORT OF A CASE.

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PLATE III.

INTRODUCTION.

One is somewhat surprised in looking over the literature to find what a meagre attention is given to the question of cerebral abscess in association with suppurative meningitis, this being all the more striking inasmuch as the literature of each is very voluminous. About 170 articles were analyzed for this paper and only comparatively few references to such association were found.

The case presented here having appeared to us of more interest from the standpoint of the pathology of brain abscess, we have ventured to give more consideration to this side of the literature than to that of suppurative meningitis, though the two from our analyses appear more or less inseparable. Before giving a detailed description, therefore, of this case it would seem well to briefly analyse the data which writers have contributed to this chapter of pathology.

PATHS OF INFECTION.

MacEwen emphasizes the close association of abscess with meningitis. According to his exhaustive consideration of this phase of the subject, abscess almost never occurs without some form or grade of meningitic involvement. The abscesses which result from infections of the middle ear include by far the greater number according to all authors, and MacEwen considers that seldom is there abscess resulting from this cause that does not involve the meninges in a suppurative process to some degree in its course inward. His classification of the cranial causes with their processes includes the formation of extradural abscess associated with chronic infections of the base of the skull. In this connection the question arises as to whether or not many of the cases occurring in the literature, as well as those not re-

ported and which are recorded in the class of the suppurative meningitides, may not have been more properly placed among the cases of extradural abscess. There is a distinct process in all these cases walling off the focus of infection into the meninges with a consequent abscess or meningitis or both.

Further extension, he declares, will certainly produce leptomeningitis with superficial cerebral softening, necrosis or ulceration which is well localized. Assuming an exacerbation or fresh secondary infection at this point, there results generally a diffuse, acute leptomeningitis. Still further extension without any necessary freshening or aggravation of the infection results in more or less extensive abscess formation. He mentions also the hematogenous or idiopathic abscesses in which no path of direct extension can be traced and believes that the abscess in these cases may be formed in five different ways, namely:

1. Thrombotic extension.
2. Retrograde embolism from infected sinus thrombosis, or the "reflex method of propagation."
3. Direct extension by perivascular sheaths.
4. True infective arterial embolism or thrombosis.
5. Occlusion of a large arterial branch, with infarction.

He also adds the possibility of propagation by the lymphatics and perineural sheaths, in which latter case meningitis is most apt to be associated.

Bramwell considers in detail only the possible paths in abscess resulting from otitis and remarks that, from the general literature on the subject, they may be divided into (*a*) the small communicating veins between the ear and the petrosal and lateral sinuses and the cerebral tissue; and (*b*) the lymphatics about the blood vessels. For his own part he advances the theory that the cause is by direct extension throughout, the bone lesions causing a contiguous meningitis and this, in turn, giving rise to abscess. He, however, gives great prominence to the propagation by the venous paths as well.

Gowers mentions that external injury may cause abscess without the interposition of any secondary meningitic process, probably an intercurrent, secondary infection following hard upon the cerebral contusion, though it is most frequently propagated by way of bone lesions, meningitis, etc., by direct extension.

Uchermann's twelve cases of otitic brain abscess which yielded nine autopsies showed five cases with extension through the

bone; three cases, two of which were cerebellar, apparently set up by infective sinus thrombosis; one case of direct extension from labyrinthine suppuration.

Miles cites a case in a man twenty-two years of age with abscess in the left temporo-sphenoidal lobe trailing off into the second and third convolutions and which was associated with a three months' otorrhea. The course of infection seemed at autopsy to be:

1. Extension to the mastoid antrum with involvement of the facial nerve.
2. Extension by the superior semicircular canal to the surface of the petrous bone and thence to the dura and cerebrum.
3. Primary involvement (abscess) of the temporal lobe.
4. Secondary abscesses extending thence to the external capsule and the lenticular nucleus.

ASSOCIATED LESIONS.

MacEwen gives in detail the lesions associated with or giving rise to abscess. He enumerates (*a*) punctured wounds penetrating the bone causing abscess by direct extension, (*b*) punctured fractures, (*c*) compound fractures with large open wounds, not likely to eventuate in abscess, (*d*) contra-coup, (*e*) infected injury without fracture extending by vascular or perivascular paths, (*f*) infective necrosis of skull without fracture, a rare condition, extending quickly by means of extradural abscess to subdural and cerebral abscess, (*g*) affections of the face and scalp, such as erysipelas, which seldom lead to abscess except by infective thrombosis and (*h*) middle ear lesions. Under this last heading he gives a very thorough discussion of the possibilities, probabilities and undisputed facts. He emphasizes the fact that acute affections seldom pass to the interior of the skull save when an infective thrombosis is set up, in general the chronic cases alone passing inward with an intermediate meningitis. The unfused sutures of the immature skull with the comparative ease of ingress to infection which they offer may be taken, he thinks, as an explanation of the relatively large number of individuals between the age of ten and twenty who develop cerebral abscess.

Bramwell concurs in most of these views. He mentions especially that in cases directly associated with otitis media one

should really look back to the acute exanthem which caused the ear disease. Bramwell inclines to give much less etiologic value to punctured wounds of the brain than does MacEwen.

Gowers sums all these associations up in two classes, (1) "near" and (2) "distant." He mentions also a number of cases which occur without any demonstrable associated lesion whatever. Of 241 cases in one series, seventy per cent. are due to "near" causes and thirty per cent. equally divided between "distant" causes and cases where no associated lesion can be found. Of the "near" processes, forty-two and five-tenths per cent. are otitis, twenty-four per cent. injury and three and five-tenths per cent. diseases of the nose and orbit, non-traumatic caries, tumors, etc. Of the distant associations he places pyemia in a position of very secondary importance.

He refers to two cases¹ in the literature of association with thrush in which the organism, *oidium albicans*, was isolated from the abscesses. We have found one other such case² in the literature.

Traumatic associations in the great majority of cases occur before the age of twenty, while in pyemia the reverse holds true to even a greater extent.

Cerebellar abscess develops almost exclusively with otitis and distant sepsis.

Stoll reports five cases in which three were associated with otitis (one of which was acute), one had traumatic association and one had no association and no tangible history save indefinite cough, night sweats and expectoration.

Heimann reports that of 819 otogenous abscesses almost one-half were associated with meningitis; other most frequent complications were sinus thrombosis and extra-dural abscess.

LOCATION.

MacEwen states that the great majority of abscesses are located in the white matter and that the cerebrum is four times as often the seat of abscess as the cerebellum. With injury they are most apt to be in the frontal and parietal lobes. When associated with otitis, the seat of election is either the temporo-

¹ Ribberth, *Berl. klin. Woch.*, Vol. XVI, No. 4, Oct. 13, 1879, p. 617. Zenker, *Bericht d. Gesellsch. f. Natur u. Heilk.*, Dresden, 1861-62.

² Wagner, *Jahrb. f. Kinderheilk.*, Vol. I, p. 56.

sphenoidal lobe or the cerebellum. In pyemia they may be anywhere, but the majority of cases are in the occipital lobe. He accepts Gowers's statistics given below.

Bramwell states that seventy-five per cent. are in the cerebral hemispheres, generally in the temporo-sphenoidal lobe, and that some are located in the pons or medulla. They are somewhat more frequent in the right side. When due to ear disease they are homolateral and generally in the spheno-temporal lobe or lateral cerebellar lobe. In these cases of otitis, tympanic involvement is usually associated with abscess of the spheno-temporal lobe and mastoid or external ear disease, on the other hand, with that in the cerebellum. In pyemia abscess may be either cerebral, cerebellar or both; rarely, however, in the cerebellum alone. In trauma the abscess localizes beneath the seat of injury as a rule.

Gowers gives the most frequent location as the cerebral or cerebellar hemispheres, very rarely the pons, medulla or middle cerebellar lobe and least frequent of all the central ganglia.

Of 231 cases the locations were:

Cerebrum	186
Cerebellum	41
Pons.	3
Medulla	1

In 56 cases:

	Right.	Left.
From injury	22	15
From nasal disease	7	1
From orbital disease	3	0
From caries other than in the temporal bones.....	1	1

Stoll's five cases showed two right and three left; two parietal, two spheno-temporal, one frontal.

Woodward reports a case of cerebellar abscess associated with persistent otorrhea. There was purulent pachymeningitis over the posterior surface of the petrous portion of the left temporal bone extending from the internal auditory meatus to the sigmoid groove. The bone under this was carious. The cerebellum where contiguous to this area was superficially soft, discolored and necrotic near the sigmoid sinus. Continuous with this area of necrosis was a large abscess cavity filled with fetid pus and bound by soft, necrotic cortical substance, the whole white matter of the entire left lobe having disintegrated.

Heimann, from his 819 cases, concludes that abscess occurs two to three times as frequently in the cerebrum as in the cerebellum and that the seat of election is most often in the sphenotemporal lobes with the least number in the frontal, and occasionally, in the occipital either alone or with temporal involvement.

Uchermann reports twelve cases of otitic brain abscess of which six were on the left and five on the right; nine were in the temporal lobe and two in the cerebellum.

MISCELLANEOUS.

Bilrowicz, out of twelve cases, finds seven associated with otitis and five with trauma. Three of these were complicated by meningitis from the beginning.

v. Magendorf reports a case of empyema of the antrum of Highmore secondary to operation for supposed neoplasm. Autopsy revealed a circumscribed purulent meningitis with abscess of the left temporal lobe, greatly thinned cortex with a crater-like opening at the anterior extremity of the gyrus hippocampi and touching the gyrus fusiforme. In several operative cases which came to autopsy the abscesses reached nearly to the dura and in the majority the dura was either involved or was in connection with the focus of infection by means of a fistula.

Reis reports a case of panophthalmitis resulting from trauma and associated with abscess in the left frontal lobe in which the infection evidently travelled by the lymph channels.

AGE AND SEX

Abscess may occur at any age, according to Bramwell, though rarely before one year or after sixty. The majority are between ten and thirty. It is more common in males than females in as much as the former are more subject to injury. If injury be excluded sex is not a factor. It is more frequent in the laboring classes owing, probably, to this same factor.

Gowers in his series gives 174 males to 58 females.

	M	F
From otitis	2	to 1
From injury	5	to 1
From distant suppuration	4	to 1

The greater liability to abscess in males from other causes than trauma Gowers finds hard to understand.

In 223 cases the evidence according to age is as follows:

1-9 years	24
10-19 years	48
20-29 years	72
30-39 years	29
40-49 years	26
50-59 years	16
60-69 years	7
70- years	1

One-third are in the third decade, one-fifth in the second and both together constitute over one-half of all cases.

Stoll's five cases were aged five, twenty, twenty-three, twenty-four and thirty-three. There were four males and one female.

From his series Heimann gathers that brain abscess occurs most frequently in the third decade but very rarely after sixty. He gives a proportion of only two males to one female.

Uchermann's series showed three in children and eight in adults: eight males and three females.

MULTIPLICITY.

According to MacEwen multiple abscesses are generally pyemic; when due to pyemia two-thirds of the abscesses are multiple. Ninety-three per cent. of abscesses associated with trauma are single. Eighty-seven per cent. of otogenous abscesses are single. Bramwell and Gowers consider the great majority of abscesses to be single. The latter gives four-fifths of all cases as such. He finds nearly all traumatic cases single with slightly fewer single ones from otitis. Less than one-half are single when associated with distant suppurations. One-third of pyemic abscesses are single; but it seems to be about as frequent to find two, three or many. One-half are in the same hemisphere and when in different hemispheres accompany distant septic processes only. One-fourth are in the same side of both cerebrum and cerebellum. Less frequently there are multiple abscesses in the cerebrum with more in the cerebellum.

Heimann also finds the great majority of abscesses single.

Uchermann in his series of twelve gives two multiple. One showed three abscesses in the cerebellum, the other showed two in the temporal lobe.

PATHOLOGY AND BACTERIOLOGY.

In regard to the course of the tissue changes at the seat of abscess Gowers gives the first manifestation as one of "red softening" simply, a condition analogous to the stage of primary engorgement in pneumonia. Here there is no pus nor any accumulation of leucocytes for a considerable time—merely a condition of vascular engorgement with redness and softening of the cerebral tissues, due, probably, to the edema accompanying the congestion. The further progress is that of an ordinary abscess formation—the polynuclear or round-celled infiltration, the necrosis and breaking down of the tissues with the formation of pus. The contents of the abscess are usually of a greenish color and of an extremely foul odor, especially in cases of long standing. The size of the cavity varies with the chronicity and the intensity of infection. Tending to be irregular and somewhat puckered in outline in the early stages, the cavity becomes later much larger and more regularly rounded in shape.

With chronicity and in direct proportion to it, as a rule, the abscess becomes encapsulated. This occurs microscopically at about the end of the second week, is rarely distinct before the end of the third week and assumes the character of a well-defined membrane only at the end of the second month.

In regard to the organisms in these lesions MacEwen considers that any specific organism for various brain infections is a question. Certainly the same organism may produce different lesions depending on virulence, opportunities of entrance, individual resistance, etc.

Various bacteria of the naso-pharynx may enter by way of the Eustachian tube. Both pathogenic and saprophytic organisms are found in great numbers. The greatest pre-eminence is given to streptococcus pyogenes and staphylococcus pyogenes aureus. *B. pyogenes foetidus* and *diplococcus lanceolatus* have been found. Both citreus and albus were found in one case. *B. meningitidis purulentæ* (Eberth) has been isolated once. *Pyocyaneus* often accompanies the pyogenic cocci. Tubercle bacillus once accompanied aureus and pyogenes foetidus. Secondary suppurative arthritis has been caused through infection by way of the jugular vein. *Oidium albicans* has been isolated in three cases. This summary does not include the group of brain abscesses in which various forms of streptothrix have been found.

REPORT OF CASE.

Clinical History.—H. P., male, nineteen years of age. Patient of Dr. W. H. George.

Family History.—Negative.

Past History.—Usual illnesses of childhood. Nothing important until one year previous to death when he suffered amputation of both legs which had been crushed in a railroad accident. Never had any ear disease or any septic process whatever during life. Habits were fair.

Present Illness.—About three weeks before his death the patient began to complain of headache and sought advice. For some time previous (length not exactly known) he had noticed exceedingly drowsy, stuporous sensations which came and went. He had felt poorly in general and his family and the attending physician noticed a decidedly marked change in temperament. He was morose, irritable and peevish. The headache was constant, very distressing and not localized. No other symptoms.

Physical Examination.—Was negative.

Clinical Course.—The patient grew slowly but steadily worse. Nausea and severe vomiting (projectile type) began and were impossible to check. The headache increased rapidly and did not respond to treatment. During the last week the patient lay in a stuporous or semi-comatose state. Several days before death the temperature rose much higher than previously and remained so until death. It had been high all through the disease. Marked retraction of head with stiffness of muscles of neck developed about this time. Convergent squint was noticed. The day before death several convulsions occurred which involved the whole body and were clonic in type as far as could be ascertained. Death followed rapidly.

Absolutely no paralysis, sensory disturbances or other localizing symptoms were noted during the disease.

Inasmuch as patient did not enter a hospital but was treated at home, the clinical record is necessarily more scanty than could be wished. The attending physician, to whose courtesy this history is due, remembers especially the astonishing lack of any suppurative process whatever which might be considered primary to the cranial conditions found at autopsy although most diligent search was made both during life and at the autopsy.

Autopsy Notes.—(Bender Laboratory Records, Autopsy No. 442), made by Dr. Blumer four and one-half hours after death, November 17, 1901.

Body of a moderately strongly built but considerably emaciated man. Both legs amputated, left at the upper third of the thigh, right at upper third of tibia. Unusual sternal prominence just above the xiphoid cartilage. Subcutaneous fat almost absent.

The peritoneal cavity is dry. Omentum normal. Appendix passes over pelvic brim and has a mesentery to the tip. Foramen of Winslow open.

Diaphragm.—Right side, fifth rib; left side, fifth rib.

Costal Cartilages.—Not ossified.

Lungs.—Collapse on opening chest. Pleural cavities empty. What appears to be the remains of a thymus gland is present and dotted with grey nodules which do not look like tubercles.

Pericardial Cavity.—Negative.

Heart.—Negative with the exception of slight pallor of the musculature. Foramen ovale closed. Coronary arteries are normal.

Left Lung.—Bronchial glands enlarged and contain one or two calcareous nodules. No adhesions. Slight hypostatic congestion.

Right Lung.—No adhesions. Hypostatic congestion of lower lobe. A few slightly elevated areas suggestive of very early broncho-pneumonia.

Spleen.—Negative.

Liver.—Decreased in consistency. Markedly cloudy on section.

Gall-bladder.—Distended with bile. Normal in appearance.

Kidneys and Adrenals.—Negative except for well-marked cloudy swelling.

Testicles.—Negative.

Pancreas.—Negative.

Intestine.—Negative.

Head.—Scalp and calvarium normal. Convolutions plainly visible through the dura, the latter being apparently normal. Superior longitudinal sinus empty. Pia does not appear congested, but extending up the Sylvian fissure following the course of the blood vessels there is a narrow tract of purulent infiltration. On removing the brain, the pia and arachnoid are thickly infiltrated with greenish-yellow pus over the area where they envelop the crura cerebri, the pons, medulla and ventral surface of medulla. Brain not opened but hardened entire.

Cord.—Not examined.

Anatomical Diagnosis.—Purulent basal leptomeningitis of uncertain origin. Hypostatic congestion of the lungs with early hypostatic broncho-pneumonia in the right lung. Cloudy swelling of the liver and kidneys.

MACROSCOPIC DESCRIPTION OF BRAIN AFTER HARDENING.

Examination of the brain reveals in the first place the existence of a well-marked and extensive suppurative leptomeningitis involving both base and convexity, but the latter to a greater extent. The process is bilateral but is somewhat more intense on the left side. At the base, the exudate is most abundant in the domain of

the interpeduncular space and surrounds on all sides the optic chiasm which it partly covers as a thick opaque membrane which is continued further forward and bridges over the interval between the two olfactory tracts, thus filling in the interfrontal segment of the inferior longitudinal fissure. Behind the crura cerebri, it extends slightly over the ventral surface of the Pons Varolii but especially invades the receding angle of the ponto-cerebellar junction and from there spreads over the inferior surface, margins and mesialportion of the superior surface (vermis superior) of the cerebellum. From the interpeduncular space, the exudate also extends laterally on either side, filling the fossa Sylvii and extending along the fissure Sylvii to the lateral convexity of both hemispheres. In so doing it closely follows the distribution of the Sylvian vessels but is not confined to this region, invading almost the entire convexity. Nevertheless the exudate is decidedly thicker in certain well-defined regions (*a*) over the parietal lobes, (*b*) over the motor or Rolandic areas. The frontal lobes present lesions a degree less marked. The occipital lobes are only mildly implicated and the temporal lobes as well as the mesial surfaces of the hemispheres are relatively totally free. The most abundant patch of exudate is to be found over the left hemisphere where it occurs as a very thick, broad, creamy, yellowish-white band which, starting below at the bend of the Sylvian fissure, extends almost vertically upward filling in entirely the lower half of the precentral sulcus.

Several frontal sections through the cerebral hemispheres reveal the presence of three fairly large and sharply defined, apparently encapsulated abscesses, two of which are situated in the left, the third in the right, hemisphere.

The lesions in the left hemisphere, best seen in a section passing through the pole of the temporal lobes (see Plate III, Fig. 1), occupy the deep white substance of the second and third frontal convolutions of which they destroy the basal portion (approximately the posterior one-third) of the lower two-thirds of the ascending frontal, slightly involving also, perhaps, the most anterior portion of the ascending parietal in its lower third. Both abscesses are elliptical in shape, of about the same dimensions, 4.5 centimeters by 2.5 centimeters, lying one immediately above the other and with their long axis obliquely transverse. Although in very close proximity the two abscess cavities are entirely distinct (absolutely independent). They are filled with a thick,

PLATE III

To Illustrate Drs. Archambault and Sawyer's Article on "Cerebral Abscess as an Associated Lesion in Acute Purulent Meningitis."

Albany Medical Annals, January, 1908

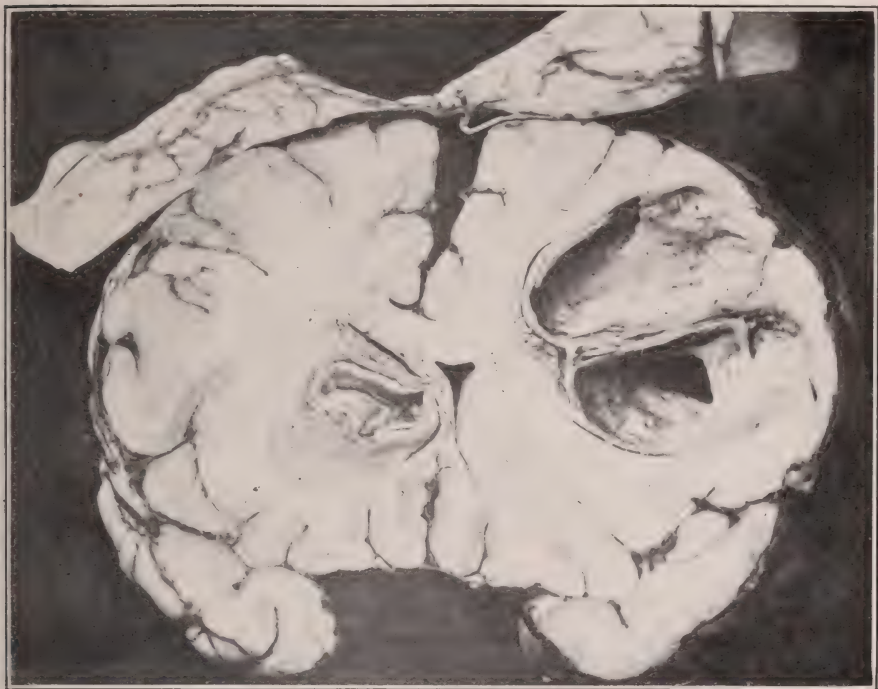


Fig. 1

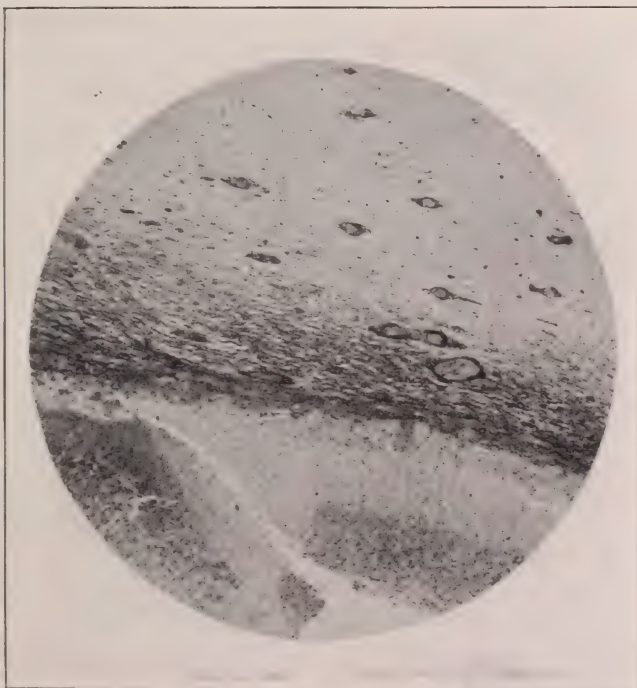


Fig. 2

creamy necrotic substance of a greenish color and seem distinctly encapsulated by a well-defined, stratified and resistant layer. These purulent foci are confined to the centrum ovale which they have almost totally destroyed and respect entirely both the basal ganglia and the cortical substance, reaching, however, to within about one centimeter from both. More posteriorly, on a section through the genu of the external capsule, there remains but a circular cavity two by two centimeters, situated in the lower third of the ascending frontal convolution and representing simply the occipital extension of the lower of the two cavities above described. The posterior wall of the cavity is plainly visible, extending not more than one centimeter below the surface level.

The abscess situated in the right hemisphere is only visible on the section through the temporal lobes. It measures two and five-tenths centimeters by one centimeter, and its long axis is obliquely transverse. Its aspect is totally different from that of the other two owing in great part, probably, to the fact that it involves a very different kind of tissue, being almost absolutely confined to the basal ganglia. It completely destroys the head of the caudate nucleus and extends to the upper portion of the lenticular nucleus, involving as it does so a few fibres of the anterior limb of the internal capsule, the greater part of which, however, together with the lenticular nucleus, it has displaced downward and outward. The surrounding centrum ovale is very slightly, if at all, implicated. The cavity of this abscess is hardly more than a linear slit between raised and irregular borders. The general contours of the focus are far less regular than those of the two other abscesses, although a thick limiting capsule is distinctly to be seen, but it presents a puckered edge and is moreover incomplete. It is well-defined above and to the inner side but thin, jagged and interrupted below and to the outer side where the process runs off into the adjacent tissue as an irregular necrotic area which infiltrates the superior angle of the lenticular nucleus. The abscess, bulging into the lateral ventricle, fills in the space normally existing between the head of the caudate nucleus and the corpus callosum and deflects that septum pellucidum towards the opposite hemisphere. The septum pellucidum and the roof of the body of the lateral ventricle at this point do not seem intact but appear edematous and infiltrated, covered with a grayish membrane very suggestive of a purulent exudate. The

cavity of the third ventricle is itself partly filled with a soft pulpy grayish-white material. The choroid plexuses about the foramen of Monro are slightly swollen and granular.

HISTOLOGIC DESCRIPTION.

Blocks for microscopic examination have been taken from several regions, consisting of the cortex and subcortex included between the abscess cavity and the external surface, so that the meningeal lesion, the structure of the abscess wall and the changes in its intermediate cortical gray matter could be studied.

In the first place, as regards the meningitis, it is distinctly of the purulent type. In the meshes of the pia overlying the cortical region examined, the blood vessels are, for the most part, occluded, being filled with red blood cells among which numerous black granules irregular in size and shape are disseminated and which evidently represent the products of disintegration. The vessel-wall is infiltrated with small, round cells. In the perivascular sheaths and in the meshes of the pia, exfoliated endothelial cells, abundant blood pigment both amorphous and crystalline, a few granular cells and especially polymorphonuclear leucocytes are to be seen. At several points altered and obliterated vessels penetrate into the subjacent cortical molecular zone.

The Structure of the Abscess.—The contents of the abscess cavity being partly retained are seen to consist essentially of polymorphonuclear leucocytes, many of which are disintegrated. The deeper portion of this central necrotic area is composed of large numbers of granular bodies laden with brownish granules and forming in some places two or three rows of regularly disposed cells.

From this point and extending towards the surface three distinct layers (see Plate III, Fig. 2) can be recognized, (1) the inner limiting zone, fairly broad, made up of newly formed connective tissue the cells of which are mostly of spindle-shaped variety but containing a fair proportion of matured connective tissue and through which numerous blood vessels and dense agglomerations of small, round cells are distributed; (2) the outer limiting layer less fibrillar in structure, again containing numerous blood vessels surrounded by thick agglomerations of small, round cells which are much more distinct in their morphology in this than in the preceding layer. These cells penetrate into the vessel-wall and

also invade the adjoining parenchyma. The lumen of most vessels is occluded owing to the presence of red cells and granular bodies. In this layer regularly-disposed rows of elongated, elliptical or spindle-shaped cells, having a finely granular matrix and the nuclei of which are marginal and situated usually midway between the poles but often totally wanting, are observed; they represent very probably a modified and pathologic type of the normal glia cell (the so-called *wurstförmige Gliazellen* of the Germans); (3) more externally a third or outermost zone is to be seen which is much less well-defined and shades off into relatively normal tissue. Blood vessels become even less numerous and are no longer surrounded by dense areas of small, round cell infiltration. The typical structure of the deeper cortex can distinctly be made out in many places, although the morphologic details of most nerve cells are decidedly indistinct and their structure generally ill-differentiated. Scattered throughout the peripheral zone are fairly numerous polygonal cells, fairly large, finely granular in texture and possessing a small, centrally-placed, dot-like nucleus. They represent another pathologic variety of the glia cell and correspond to what the German have called epithelioid glia cells.

CONCLUSIONS.

Certain features of this case, finally, are worthy of especial consideration.

Regarding, first, the purulent meningitic process, it is most marked at the base of the brain, a rare situation for other than tuberculous meningitis.

The relative integrity of the temporal lobes, taken in connection with the negative findings during life and at autopsy, thoroughly excludes the possibility of the processes being otogenous in character.

With regard to the abscesses, several points of interest are to be noted. In the first place, the abscesses are multiple and limited to the cerebral hemispheres, two being on the left side and one on the right. This is in one way an unusual feature as it is generally taught that abscesses are more common in the right hemisphere, four to one, according to Gowers. As to location, two of the abscesses are strictly limited to the frontal lobes, the third one being situated for the most part in the frontal lobe

(ascending frontal convolution) and invading the parietal lobe (ascending parietal convolution), situated for the most part in the frontal and involving the parietal to only a small extent. We have already seen that Heimann considers the frontal lobe as the least frequent seat of involvement. Then, again, the two abscesses in the left hemisphere are strictly confined to the centrum ovale. The abscess in the right hemisphere is as sharply limited, as we have seen, to the basal ganglia, destroying the greater part of the head of the caudate nucleus and the adjacent portion of the lenticular nucleus. According to Gowers this is the rarest seat of abscess formation. The case reported by Miles is the only similar one we have been able to find in the literature.

Concerning the pathogenesis of these multiple abscesses we possess practically no data upon which to base any logical course of reasoning with regard to the chronological relation they bear to the meningitis. The only facts which can be of any assistance to us are those relative to the prodromal stage of the clinical picture and which, after all, are of very uncertain significance. Still, feeling justified in according due consideration to the observations of the attending physician, according to whom these prodromata undeniably existed, it would seem reasonable to believe that these very manifestations were the clinical expression of a latent process represented by the abscess formation. Another factor which would urge strongly in favor of this hypothesis is the homolateral preponderance of both meningeal and intracerebral lesions. Even more significant than this is the fact that the most extensive area of meningitis directly overlies the point of maximum abscess development, with however this important feature, that the intervening cortex is itself in no way involved in the actual lesion. Finally, of more actual positive value than any other point thus far considered is the fact that all three abscess cavities are distinctly encapsulated by fairly mature connective tissue. Reasoning thus from this fact alone and in view of Gowers's account of the time necessary to the production of such a capsule, it appears to us perfectly justifiable to maintain that, between two lesions, one represented by a distinctly acute meningitis and the other by a stationary and definitely encapsulated process, the question of the order in which they have developed can hardly remain a matter of any grave doubt.

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THE PHYSIOLOGIC ACTION, ELIMINATION AND THERAPEUTIC APPLICATION OF SODIUM CACODYLATE, USED HYPODERMATICALLY.*

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According to Burlureaux,¹ the credit of the introduction of sodium cacodylate as a therapeutic agent belongs to Gautier, who on June 6, 1899, reported a series of observations in which he (Burlureaux) assisted. During the succeeding four years numberless enthusiastic, not to say extravagant, articles by European observers heralded the drug as a desirable substitute for metallic arsenic. On January 31, 1903, however, T. R. Fraser² gave the drug, so far as English and American clinicians and authors are concerned, its *coup de grâce*, for, with but one or

* Read at the Eighth Annual Meeting of the American Therapeutic Society, Washington, May 4, 6 and 7, 1907. Published also in the *Journal of the American Medical Association*, 1907, xlviii, 2090.

* Sodium cacodylate, $\text{NaAs}(\text{CH}_3)_2\text{O}_2$, is the sodium salt of cacodylic acid, $\text{HAs}(\text{CH}_3)_2\text{O}_2$. Cacodylic acid is dimethyl-arsenic acid derived from arsenic acid, $\text{AsO}(\text{OH})_3$, by replacing two hydroxyl groups by two methyl radicles, forming $\text{AsO}(\text{CH}_3)_2\text{OH}$, also written $\text{HAs}(\text{CH}_3)_2\text{O}$.

¹ Cacodylates de Soude, *Bull. Gén. de Thérapeutique*, 1901, clxi, p. 524.

² The Inefficiency of the Di-Sodic-Methyl-Arsenate as a Therapeutic Agent, *The Lancet*, 1903, vol. 154, p. 304-5.

two exceptions, all English and American text-books on materia medica deny the possibility of the drug, used hypodermatically, having either physiologic action or therapeutic value. In the article alluded to Fraser says:

"The . . . therapeutic effects of arsenic are caused by its pharmacologic action, and if it be so united with other bodies as to be incapable of producing any pharmacologic action or of inducing in large quantities the toxic effects, it can no longer be capable of producing the therapeutic effects in disease which are recognized effects of arsenic. If, therefore, the cacodylates are so inert that they may be given without producing any symptoms of the action of arsenic, it is because the arsenic has formed so firm and stable a union that no dissociating influence in the body is able to set free an arsenic ion from the combination. They are eliminated in such stable combinations that they fail to react to the tests for arsenates or yield arsenum when subjected to Marsh's test."

We are able to show that Fraser's reasoning is based on entirely false premises, for not only has it a distinct pharmacologic action (being decomposed in the body and eliminated in the form of arsenates by the urine, the feces, and probably by the sweat and the breath), and has a toxic effect, but the urine of patients under its influence yields arsenates and reacts to Marsh's test. It also gives many of the therapeutic effects common to the arsenic compounds.

The experimental part of this communication was undertaken with the view of explaining the cause of the many and excellent clinical results which have been obtained in the use of sodium cacodylate hypodermatically. An attempt was made to answer the following questions:

1. IN WHAT FORM DOES THE ARSENIC INJECTED AS SODIUM CACODYLATE BECOME ELIMINATED, AND WHAT IS THE QUANTITATIVE RELATION OF INJECTION TO EXCRETION?
2. WHAT ARE THE PATHS OF EXCRETION?
3. IS THERE A TOXIC DOSE?

In order to obtain an answer to the first question, as to the fate of the injected cacodylate, three patients were given daily hypodermatic injections of varying amounts, ranging from 0.05 gm. to 0.2 gm., and the urine examined daily.

During the time one patient was receiving 0.05 gm. for ten days no arsenic in any form could be detected in the urine.*

* Unfortunately, the value of the biologic test using *penicillium brevicaulis* came to our notice too late to be taken advantage of, but we intend to employ this means of detecting in urine quantities of inorganic arsenic too small for ordinary chemical methods.

Within twenty-four hours after commencing the second course the dose having been increased to 0.15 gm., a reaction for sodium cacodylate was obtained. Inorganic arsenic began to be eliminated after forty-four days from the commencement of the treatment, at which time the urine possessed a marked odor of garlic.

In the two other cases, in which 0.1 gm. was injected from the outset, the drug was detected on the thirty-sixth and tenth days, respectively. Inorganic arsenic could not be shown in the urine of the latter case, which was, however, under observance for only twenty-nine days. The first patient eliminated arsenic in inorganic form after twenty-two days.

Regarding the quantitative relation of the amount eliminated to that injected, our results agree in the main with those of Heffter,⁴ who recovered in the urine but from one-seventh to one-ninth of the amount introduced hypodermatically. Apparently personal idiosyncrasy plays a very important part in this consideration, since in Case 3, under treatment twenty-nine days, the patient receiving daily from 0.1 gm. to 0.15 gm., only one per cent. of the injected drug was eliminated unchanged and, as previously stated, no inorganic arsenic could be detected. On the other hand, in Case 2, with the same treatment, the daily amount eliminated varied from five to eight per cent.

That these figures do not represent the true state of affairs in this connection must be evident from our results with animals. This point will be discussed later.

The question was further pursued in experiments on dogs. A detailed account of one such may serve as a type for all. Injection of 0.3 gm. of sodium cacodylate was given daily for nine days without any symptom of any objective sort. The compound was excreted on the second day and daily thereafter. On the tenth day the dose was increased to 0.5, and 1.0 gm. on the twelfth day and continued for five days subsequently. Inorganic arsenic made its appearance in the urine on the twelfth day. In a similar experiment, in which the doses were about three and one-half times the size of this one, the inorganic arsenic could be detected on the tenth day. The amount of daily elimination showed no direct relation to that of cacodylate injection. The excretion from day to day varied from 0.2 to 4 mg. In

⁴Heffter (A.): Des Verhalten der Kakodylsäure in Organismus, *Archiv. f. Experimentelle Path.*, 1901, 46, 230-241.

general, however, the larger quantities were eliminated during the periods of high dosage. The percentage of injected sodium cacodylate eliminated varied from six to ten per cent. In all the animal experiments the injected quantity was distributed in from two to four different locations, in the attempt to determine if better results could be obtained in this way. This may explain why a lower percentage of the injected drug was eliminated. No macroscopic evidence of a pathologic change showed itself on autopsy of Dog 1. Portions of the liver, muscle and bone marrow were subjected to chemical analysis according to the method outlined by Heffter, *and in all three tissues inorganic arsenic was present*. Of especial importance was the finding in about one gram of marrow from the femur 0.3 mg. of arsenic in inorganic form. The liver showed approximately the same relative amounts with only traces in the muscle.

It occurred to us that perhaps the reason why such a small percentage of the drug could be detected in the urine after injection might be found in the fact of the elimination of the compound through the intestine in inorganic form. Ordinarily such a condition sets up intestinal changes of unpleasant character. In these experiments the feces were examined, and in all cases when inorganic arsenic began to appear in the urine it could be shown to be present in the feces also. Undoubtedly, therefore, the intestinal tract serves as a second means of exit for the inorganic arsenic formed from the cacodylate. This is only to be expected since the intestinal disturbances which follow the administration of inorganic arsenic subcutaneously are caused by the compound becoming excreted into the lumen of the intestine.

Since the injection of 3.0 gm. of the drug did not occasion any objective symptoms in the dog, it was determined to employ rabbits to show, if possible, whether or not a toxic dose could be obtained. A large rabbit, weighing 2800.0 gm., was given an injection of 1.0 gm. in the afternoon at four o'clock. The next morning the animal was found dead in the cage, but still warm. On section a very distinct odor of garlic was noticed, sufficient to be evident to persons entering the room. The tissues (liver and muscle) after removal from the animal retained the odor for several hours, or until they were subjected to chemical treatment. Arsenic in reduced form was, therefore, present in these organs. That the odor was due to inorganic arsenic was shown in the

chemical analysis. Another rabbit, receiving 0.5 gm., showed no effect, nor did the urine possess any odor of garlic or cacodyl. The dose was increased on the succeeding day to 0.8 gm. The next morning this animal also was found dead, with the same results as with the one previously mentioned.

Our results, therefore, indicate that after the injection of sodium cacodylate from six to ten per cent. is eliminated unchanged. Arsenic in inorganic form makes its appearance in the urine and feces in small but definite amounts if the injections are continued for any length of time. In general the larger the dose the sooner the arsenic shows itself in this form. Arsenic in inorganic form also is deposited in the tissues of the body after cacodylate injection. The body, therefore, possesses the power of decomposing the organic arsenic compound into an active inorganic form. The small amount of this produced at any one time allows of large dosage without toxic effect.

This cursory summary of the experimental work thus far accomplished forms sufficient basis, we think, for the following discussion of the problem from the experimental standpoint.

In the determination of the question as to the pharmacologic value of sodium cacodylate the all-important fact to be elucidated is the possibility of the drug becoming decomposed or reduced in the animal body to cacodyl, arsenious or arsenic acid. Cacodylic acid or any of its salts unquestionably is without any great effect pharmacologically. That they may occasion toxic symptoms, however, is asserted by Lebaln,⁵ Schultz⁶ and Rabuteau.⁷ Whether these symptoms are due to the appearance of cacodyl, which is extremely poisonous, or to the reduction of the arsenic to arsenious or arsenic acid was left undecided by those several investigators. It is currently supposed that whatever the effect of arsenic in therapeutic doses it is due to the presence of the AsO_2'' or AsO_3'' ion; in which case arsenic, combined with carbon in the so-called organic condition in which no such active ion exists, could not form a substitute for the inorganic arsenic unless it first suffered a reduction and decomposition in the tissues. That such a transformation may take place in the body

⁵ *Diss. Rostock*, 1868.

⁶ *Arch. f. exper. Path. u. Pharm.*, xi, p. 131.

⁷ *Jahres. f. Thierchemie*, xii, p. 96.

is too well proven by previous observers, such as Heffter, Schmidt and Chouse⁸ and others, it having been shown that surviving organs *in vitro* possessed the power of decomposing cacodylic acid to the oxid or even to cacodyl itself. Such experiments did not extend to testing the products for inorganic arsenic after such treatment. Our experiments are sufficient evidence, however, to settle this point.

That such large doses are necessary to produce an effect or to get toxic symptoms is undoubtedly due to the fact of the only partial decomposition of the compound to inorganic arsenic. The extreme tolerance is to be ascribed to a self-regulation and automatic immunity which the organism attains by the constant presence and new formation of arsenic of the inorganic type. The production of inorganic arsenic in the form of arsenious or arsenic acid in *nascent* state in the body is probably not an unimportant factor in the beneficial effects obtained in arsenic treatment of this character. In this condition smaller amounts of the ion become more active and induce better results than arsenic introduced as such *per os*.

It is not, however, outside of the realm of possibility that cacodyl or its oxide, which is also unquestionably produced after this type of arsenic administration, does exert, itself, a distinct pharmacologic action specific for itself, and not unlike in general results that of inorganic arsenic compounds. This phase of the question we expect to take up as a further study.

The blood picture under the administration of the drug is a very constant one. In anemic cases there is always an increase in the percentage of hemoglobin, usually a small increase in red cells, but little variation in the number of whites, an increase in the percentage of polymorphonuclears and large mononuclears, with a corresponding decrease in the small mononuclears. In non-anemic cases there seems to be no relation in the changes of the hemoglobin or the red blood cells to the administration of the cacodylate, but there is usually an increase in the polymorphonuclears with but little change in the large or small mononuclears. The arterial pressure seems to be unaffected. The blood records in two cases, one of each type, will serve to illustrate:

⁸ Moleschott's Untersuchungen, vi, p. 122.

DATE.	Per cent. Hemo.	Red.	White.	Per cent. Poly.	Per cent. L. Mono.	Per cent. S. Mono.	Eosin. Per cent.	Dose.
March 7.....	63	4,150,000	11,500	47.5	10	37.5	4.5	0.100 Gm.
March 13.....	66	4,148,080	10,900	48.	12	36.5	3.5	0.100 Gm.
March 16.....	75	4,200,000	11,000	49.	14	36.	1.	0.100 Gm.
March 22.....	82	4,190,000	10,000	55.	18	26.	1.	0.100 Gm.
March 27.....	86	4,300,000	10,500	57.	18	24.5	0.5	0.100 Gm.
April 3.....	86	4,320,000	11,200	57.	19	23.	1.	Omitted.
April 6.....	75	4,200,000	11,300	58.	20	20.	1.5	0.150 Gm.
April 10.....	79	4,300,000	10,000	57.5	22	20.	0.5	0.150 Gm.
April 15.....	85	4,250,000	9,800	58.	22	19.5	0.5	0.150 Gm.
April 18.....	87	4,350,000	10,500	58.	23	18.	1.	0.150 Gm.

Simple anemia: blood examination made by Dr. J. Lewi Donhauser.

DATE.	Per cent. Hemo.	Red.	White.	Per cent. Poly.	Per cent. L. Mono.	Per cent. S. Mono.	Eosin. Per cent.	Dose.
Feb. 21.....	.....	5,250,000	.....	.....	.....	.....	.....	0.100 Gm.
Feb. 27.....	.....	5,240,000	6,200	58	10	30	2	0.100 Gm.
March 5.....	85	5,090,000	9,800	58	5	35	2	0.150 Gm.
March 11.....	100	6,125,000	8,600	67	1	32	0	Omitted
March 16.....	75	5,820,000	12,000	62	5	30	3	Omitted.
March 22.....	90	6,300,000	8,200	55	8	37	0	0.200 Gm.
April 1.....	85	4,440,000	6,200	62	7	30	1	0.200 Gm.
April 9.....	90	4,200,000	10,400	.....	.....	.....	.....	0.200 Gm.
April 16.....	.....	5,600,000	18,000	77	6	14	3	0.200 Gm.
April 15.....	.....	5,600,000	18,000	77	6	14	3	0.200 Gm.

Neurosis; woman aged seventy-three; blood examination made by Dr. J. F. Robinson, A. B. Other blood examinations from which this report is compiled were made by Drs. A. T. Laird, C. K. Winne, Jr., and M. C. Collier, Ph.B.

In reporting the therapeutic results space does not permit giving detailed histories, but one case illustrates so forcibly the curative properties of the drug and the possibilities of large and long-continued dosage that it will be given in brief. In all instances in which the term "courses" is used it means ten days' treatment with an interval of non-treatment.

Case I.—Miss V. V., aged twenty-two, cloak model, had lichen ruber.

History.—She had been treated for eczema at varying intervals. The intestinal tract would not tolerate any form of arsenic for more than ten days. She was much emaciated and decidedly anemic (hemoglobin fifty-six per cent.) and had amenorrhea.

Treatment.—Treatment with sodium cacodylate hypodermatically commenced February 22, 1904, with 0.15 gm. once each day (this equals about 61.8 per cent. of arsenic trioxid or 0.093 gm.) for six days, when the dose was doubled. Six days later the dose was increased to 0.45 gm., and six days later to 0.6 gm. This dosage was continued for thirty-four days, when it was reduced to 0.3 gm. Four weeks later it was again reduced to 0.15 gm., and on June 15 to 0.05

gm. every other day for three weeks, when it was omitted for ten days and then resumed for three weeks more every other day.

Result.—The patient's appetite was improved in one week after commencing treatment. She menstruated on March 15, the first time in four months, and commenced to perspire on April 15, the first in several years. She was discharged, cured, on August 4, 1904, after 164 days of treatment, having gained 25½ pounds, and she has never shown any signs of recurrence. She was given in all 41.95 gm. of sodium cacodylate, or what corresponds to 25.925 gm. of arsenic trioxid, or to 19.632 gm. of arsenic.

Three cases of psoriasis were treated. In one patient the disease was aggravated by its use and after six courses of 0.05 gm. the treatment was abandoned. Three others—one with a very severe attack—were permanently cured by four courses in one and three courses of 0.1 gm. in the others.

One patient with general eczema and one with palmar eczema were cured, the first with four courses of 0.15 gm. and the last with three courses of 0.1 gm., while a patient with eczema crurum was in no way benefited by doses as large as 0.3 gm.

Eight patients with simple anemia were successfully treated, none requiring larger doses than 0.15 gm., or more than three periods of ten days' treatment with ten days' interval.

Three patients with anemia with persistent headache were entirely cured; one of seven years' standing requiring six courses of treatment with 0.05 gm., improvement commencing during third course, and in one of six years' standing the patient was cured by four courses of 0.1 gm., improvement commencing on third day of treatment.

Three patients with splenic anemia were treated. One improved for a short time, but the cure was not permanent and the patient died. In another case, of fifteen years' standing, the patient was cured by five courses of treatment with 0.15 gm., and the third patient, a case of fourteen and one-half years' standing by the same. This patient has shown no sign of return after three years.

One patient with pernicious anemia died after eight days' treatment by a colleague, with doses of about 0.02 gm. A patient of Dr. Henry Hun, now under observation, in whom the anemia was accompanied by a persistent epistaxis of several years' standing, shows marked improvement, the fever, delirium, dyspnea, epistaxis and other disagreeable symptoms having disappeared, the hemoglobin having increased from 20 to 40 per cent., and the red cells from 1,032,000 to 2,400,000 in twenty-seven days with doses of 0.06 gm. for twelve days, 0.12 gm. for eight days, and 0.15 gm. the balance, and at which doses the man is still being treated.

One patient with Hodgkin's disease died. This case was treated at our suggestion by a colleague, and no history is obtainable.

Two patients with neuritis with anemia were cured with 0.05 gm. doses, one after three courses of ten days, and the other after two courses. In another case, in which there was no associated anemia, there was no improvement.

Two patients with chorea were successfully treated by the administration of 0.1 gm. for two and three courses, respectively, one had been treated for some time with liquor potassii arsenitis, and, while benefited, was never cured, as the attacks recurred at three months intervals.

One patient with gastralgia of malarial origin was cured by two courses of 0.15 gm., and in two cases of exhaustion—both in women of more than 60 years, one following bronchitis and one following what was called diabetes—the patients were speedily helped to a complete recovery.

Of neuroses of various character, sixteen were treated, in only two cases more than 0.15 gm. being used. Five of these patients were not benefited, four were much helped and seven were cured.

Of forty-five cases reported then, thirty-four patients were either entirely cured or much benefited, eleven were in no way helped, and two were apparently made worse. In several of the second class the failure may be due to the fact that they were among the earlier cases treated, the dosage being very small and there being certain faults in technic. In these cases a French preparation sold in tubes, each containing a solution representing 0.05 gm., were used subcutaneously, with a short needle, the solution being cold. Later a sterile solution was made by dissolving the salt in distilled water. This, however, soon developed fungi, and on boiling gave off an alliaceous odor. Our present practice is to obtain the required amount of the salt, each dose enclosed in a gelatin capsule by the pharmacist; the drug is poured into the open end of a glass syringe, the plunger replaced and the syringe then filled with boiling water; the site of injection, preferably the buttock, is then washed with alcohol and a long needle is thrust deeply into the gluteal muscle and the warm solution injected. By this method little if any discomfort is complained of, and the warmth of the solution seems to add much to the rapidity of effect. Clinically it is usually noted that soon after injection there is a marked sense of exhilaration, and it is no unusual thing for a patient to come back after the cessation of a course and request a resumption of treatment on the ground that "it makes me feel so much better," a symptom common to arsenic medication.

Almost invariably the patient gains in weight, usually with considerable rapidity at first. In three of our cases a marked garlic-like odor to the breath was observed, in one this invariably coming on in half an hour after an injection of 0.05 gm. One patient

reported the odor in the perspiration about a week after injections of 0.2 gm. commenced, and a complaint of a garlic odor to the urine is no infrequent occurrence. This odor may also be observed in inorganic arsenic medication.

Many of the French writers state that unless improvement commences after five or six injections it is not worth while to continue, and if one course has not proved beneficial a second is not likely to. Our experience, however, is that rapidity of improvement depends much on the size of the dose, being slow with small doses and quick with large ones.

It would seem, therefore—if our data be accepted as correct—that Fraser and those who have accepted his statements have (as Fraser's paper seems to indicate) made their sweeping assertions as the result of a few clinical failures and not as the result of careful physiologic observation.

CONGENITAL STENOSIS OF THE DUODENUM.— REPORT OF CASE.*

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PLATE IV.

Congenital occlusion of the intestine is an infrequent condition. Theremin, in 1877, emphasizing its rarity, states that among 111,401 children this malformation was observed only twice, and in St. Petersburg it had occurred but nine times. At that time no cases had been reported from the foundling asylums in Moscow and Prague. In 1883, Gärtner collected thirty-eight cases; in twenty of these the occlusion had occurred in the jejunum and ileum, in sixteen in the duodenum and twice in the colon. Cordes, in 1901, collected fifty-six cases of duodenal occlusion and added one observation of her own. In 1903, Kuliga, after a very careful search through the literature, succeeded in bringing together 185 cases, forty-six of which occurred in the duodenum, ninety-four in the jejunum and ileum and forty-five in the colon and rectum.

* Published also in *Archives of Pediatrics*, 1907, XXIV, 813.

The following case, aside from its rarity, is of interest, as the condition was recognized clinically.

Mrs. C., of Williamstown, Mass., came to Albany for her confinement because she wished her baby to be under the care of a specialist, and was referred by Dr. Snow, of Buffalo, to the writer (Dr. Shaw). In my absence from the country Dr. MacFarlane, of Albany, took charge of the patient, and to him I am indebted for the notes and history of the case.

Clinical History.—The child, a girl, was born July 19, 1906, at 9:50 P. M., at the Albany Hospital, under the care of Dr. Macfarlane. The labor was normal, except for a retained placenta and some postpartum hemorrhage, and the mother made an uninterrupted recovery. The child seemed strong and healthy and weighed seven and one-half pounds. Twelve hours after birth she passed meconium. She was given small quantities of warm water and vomited a small amount of greenish fluid fifteen hours after birth. She was placed at the breast two hours later and again in two hours, and after the latter feeding vomited a small quantity of greenish fluid which contained particles of a white material evidently milk curds. The next nursing was retained. On the next two days (the second and third after birth) she nursed at the breast; vomited greenish fluid five times, once in large quantity; passed meconium three times; seemed hungry and cried as if in great pain. On July 23d (the fourth day after birth) it was thought that the nervous state of the mother might be responsible for the condition of the child. Nursing at the breast was discontinued and barley water and, later, whey was administered. A greenish-yellow fluid containing white particles was vomited almost immediately after each ingestion of food. Meconium was passed and later a brownish movement showing a small amount of mucus. On July 24th (the fifth day after birth) hot water was given in dram doses every hour, and retained at the longest only twenty minutes. The stomach was thoroughly washed out after the removal of putrid, foul-smelling greenish contents. During the night there were three small brownish dejections. On the sixth day after birth (July 25th) the stomach was washed out twice and the child vomited only once (a clear fluid two hours after the last lavage). A napkin and some of the vomited material were examined by Dr. H. C. Jackson, of the Bender Laboratory, and bile was shown to be present in both.

Dr. Albert Vander Veer was then called in consultation. On account of the apparent improvement in the gastric condition, and the fact that bile had been found in both vomitus and defecation, it was hoped that the stenosis might be spastic, and operative intervention was postponed. On the next three days the stomach was washed daily, whey was given by mouth and normal saline solution per rectum three times a day. Although she vomited only once in these three days, she grew constantly weaker, and on July 29th, ten days after birth, she weighed five and one-quarter pounds, showing a loss of two and one-quarter pounds. Her condition gradually grew worse in spite of lavage, and an operation having been deemed inadvisable on account of her exhausted state, she died on August 1st, thirteen days after birth.

Autopsy Record (Bender Laboratory 0-1,028).—Postmortem examination made August 3, 1906, by Dr. Baldauf.

Clinical Diagnosis.—Stenosis of the intestine below and near the opening of the common bile duct.

Abdomen.—Subcutaneous fat almost absent. Peritoneal surface smooth and glistening. Spleen not enlarged, free from adhesions. Appendix, coiled upon itself and retrocecal, measures about 3 cm. in length. Mesenteric lymph nodes somewhat enlarged, pale and firm. Below the pyloric orifice of the stomach is a dilatation of the intestine including the whole course of the duodenum and extending below the bile duct, giving the organ, from its size and general shape, the appearance of the stomach. The mesocolon of the entire ascending colon, except a small free edge about 0.5 cm. in thickness, is intimately adherent to the dilated duodenum.

Measurements.—Circumference of pyloric orifice, 2.2 cm.; length of small curvature of the stomach, 5.8 cm.; length of greater curvature of the stomach, 16.2 cm.; circumference of the dilated duodenum, 1 cm. from the pylorus, 3.7 cm.; circumference of the dilated duodenum, 2 cm. from the pylorus, 4.8 cm.; length along the greater curvature of the dilated duodenum, 18.5 cm.; length along the lesser curvature of the dilated duodenum, 9 cm. The stricture lies 5 cm. below the papilla of Vater. The greatest diameter of the dilated duodenum is 9.4 cm.

Below the dilatation is a stricture which will not admit the smallest probe, but through which small amounts of fecal material can be forced.

All other organs normal.

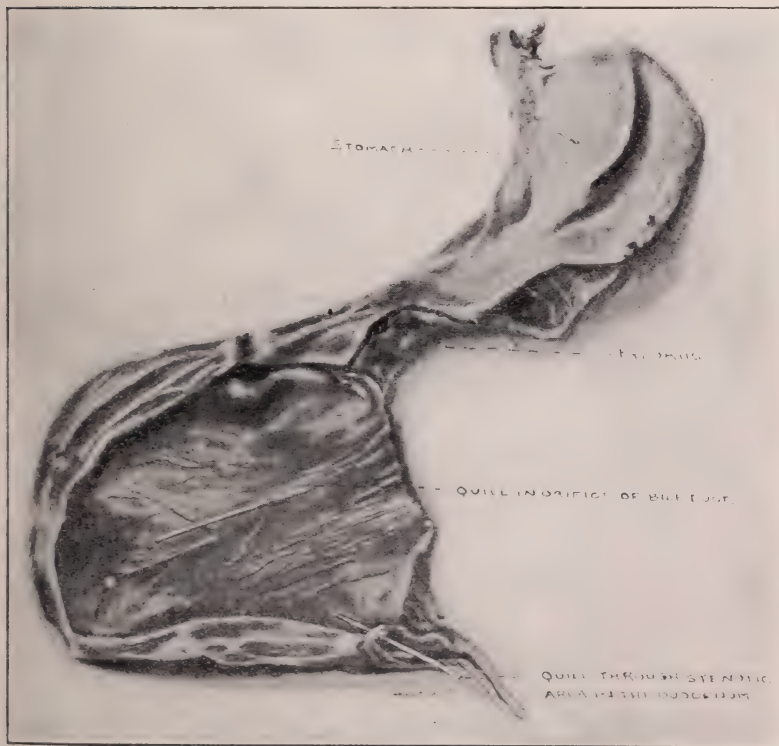
Anatomical Diagnosis.—Congenital duodenal stenosis.

Various causes have been assigned as etiological factors in these congenital anomalies. Until very recently no satisfactory

PLATE IV

To Illustrate Drs. Shaw and Baldauf's Article on "Congenital Stenosis of the Duodenum; Report of a Case."

Albany Medical Annals, January, 1908



explanation has been offered for the larger number of the cases. In many instances associated pathological lesions were considered, but when such did not exist there was recourse only to hypothesis and theory. Silbermann, Theremin and Fiedler have suggested the idea of peritonitis during fetal life as a causative factor. Fiedler does not consider that the absence of any evidence of peritonitis is proof positive that a peritonitis has never existed, for he maintains that a peritonitis may have disappeared without leaving any trace of the original lesion. Such peritonitis is generally of syphilitic or tuberculous origin. According to some authors, the peritonitis must have existed before the third month, because, in the cases examined, where there was total occlusion of the intestinal lumen, no bile appeared in the distal portion of the gut. Where the syphilitic condition existed so early and the child went to normal delivery, it seems strange that no other signs of syphilis were visible, for in the cases examined no visceral changes were evident. Mauclaire's case, in which he ascribes the occlusion to a tuberculous peritonitis, may have been the result of the volvulus which was present, the tuberculous peritonitis being secondary. This is the view of Schottelius. Küttner, Gärtner, Schottelius, Schlagel and Good believe the condition to be the result of volvulus. A few cases have recently been added to the thirteen cases due to volvulus collected by Gärtner. There are some, however, who consider the volvulus secondary to other conditions. Steinthal, Kirchner, Marchwald and others consider the atresias and stenoses part of an intrauterine enteritis. Marchwald, in one of his cases, demonstrated cocci at the seat of the lesion. In a case reported by Chiari, an intussusception was demonstrated. Pressure from without is considered of importance by others; for instance, in a case reported by Wiederhofer an alveolar carcinoma involving the liver was found, in Kristeller's case an enlarged liver, in Hirschsprung's and Serr's case a hypertrophic head of the pancreas, in Schott's case a cyst of the ileocecal fossa, in Nobiling's case formation of a loop by the omphalomesenteric artery. As other factors, Jacobi and Charrier laid stress on the formation of amniotic bands pressing and occluding the gut. Hess emphasized the possibility of compression of the duodenum at the point where it pierces the mesocolon. Wyss and Hammer think the stenosis is due to hypertrophic valvulæ conniventes, and Bretschneider, Hempel, Schellong and Ahlfeld ascribe an influence

to the omphalo-mesenteric duct. While these various influences may be of some interest in the production of these anatomical lesions and the various hypotheses and theories may apply to a certain number of cases, there are numerous cases for which no cause is evident and no logical hypothesis can be offered. An hypothesis which might apply to all cases could be formulated on a purely embryonic basis. Tandler, in a recent communication, emphasizes the transitory disappearance of the lumen of the intestine in the earliest embryos. In studying the cross sections of the duodenum of a 12.5 and 14.5 millimeter embryo, he observed the lumen occluded by an epithelial-like proliferation. He afterward made a systematic examination of eleven embryos ranging from thirty to sixty days old. In the two youngest embryos the duodenum was visible with an open and unobstructed lumen. In the next older an increase of the epithelial elements had begun with evident narrowing of the lumen, while in the next two older embryos the increase of epithelial cells and narrowing of the lumen were more evident. This became more marked in the next older embryo, while in the three oldest embryos there was a disappearance of the epithelial cells and the intestine had assumed its original appearance. To summarize: In the youngest embryos the lumen of the intestine was easily visible, but later the lumen disappeared on account of a proliferation of epithelial cells. Later, however, the epithelial cells became absorbed and the lumen reappeared. If these observations be accepted, we may find an explanation of many cases of atresia and stenosis; the atresia being dependent upon the non-absorption of the hyperplastic epithelium and the stenosis upon its partial absorption.

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LIPOMA OF THE INTESTINE OCCURRING IN A CHILD THIRTEEN MONTHS OLD AND CAUSING SYMPTOMS OF INTESTINAL OBSTRUCTION.*

By GEORGE CHANDLER, M.D.,
Of Kingston, N. Y.

AND

LEON K. BALDAUF, M.D.,
Instructor in Pathology and Bacteriology, Albany Medical College.

Lipoma, as an intestinal tumor, occurs very infrequently. Hiller in 1899 collected twenty-three cases. A later review by Ward, including the cases reported by him, increased the number to thirty-five and in a recent very comprehensive review, Dewis has added nine additional reports. The rarity of the lesion, the early age at which it appeared in the case here given, the peculiar symptoms to which it gave rise and the fact that the literature contains no reference to a similar condition in an infant, makes the following report worthy of publication.

Clinical History.—Female, aged thirteen months, appeared for operation September 13, 1906, with symptoms of intestinal obstruction.

Family History.—Negative.

Past History.—The child was born July 12, 1905, after a normal labor. It was breast fed and appeared well nourished at first but later showed slight signs of rickets. Two or three months after birth, the mother noticed that the left side of the abdomen appeared unusually full and round. She attributed this, however, to the healthy condition of the child. At that time there were no stomach symptoms, but a slight "colic" appeared which continued daily for four or five months. The attacks later however diminished in frequency, there being intervals of two or three weeks, during which the child appeared perfectly well. Defecation has always occurred two or three times a day. The feces were soft in consistency; well formed stools have never been seen.

Present illness began July 15, with vomiting and marked flatus. Rectal enemata were given and afforded complete relief. The child then remained well until August 7 when she had a similar attack, the same treatment again proving effective. During these attacks the mother noticed a "bunch" in the left side of the abdomen, which remained after the attacks had subsided. The child had similar attacks on August 20 and 30. On September 9 continuous vomiting developed and marked constipation which nothing could relieve. The patient became steadily worse and was brought to the Benedictine Sanitarium in Kingston, N. Y., September 13, 1906. At this time the child was

* Published also in *Annals of Surgery*, 1907, xlv, 836.

in a precarious condition; the pulse was barely perceptible; the abdomen markedly distended and vomiting continuous.

Operation.—Ether anesthesia. Incision in the median line. Removal of a large pedunculated tumor occupying the right portion of the abdominal cavity and attached to the sigmoid flexure opposite the mesenteric attachment by a short pedicle 10 cm. in length. The tumor had rotated in such a way that the intestine was twisted twice. The tumor was removed by cutting the pedicle close to the intestinal wall. The child made an uneventful recovery and left the sanitarium two weeks later.

Pathological Examination.—The specimen consists of a kidney-shaped mass 12 x 7 x 9 cm. with a broad pedicle attached to the concave side or "hilum." The surface is everywhere smooth and glistening. Beneath the surface are numerous hemorrhagic areas averaging 2.5 cm. in the greatest diameter. At the point of attachment, the mass is definitely lobulated. On section, the yellow tissue is mottled with numerous hemorrhagic areas, which are especially abundant at one pole of the tumor. The tumor substance shows in places a division by fine strands of connective tissue into definite and rather large lobules. Elsewhere it presents a lamellated appearance, no lobules being visible. The mass is rather elastic in consistency and on pressure a fatty material is expressed. Microscopic examination reveals a pure lipoma with areas of hemorrhage.

Anatomical Diagnosis.—Lipoma with numerous areas of hemorrhage.

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 DOWD, J. J. A Small Fibroma of the Ileum resulting in Obstruction of the Bowel, with a Consideration of Various Forms of Benign Intestinal Tumor. *Boston Medical and Surgical Journal*, 1906, CLV, 427.

RUPTURE OF UTERUS DUE TO A FIBROMYOMA.

By WM. A. KRIEGER, M.D.,

Pathological House-Officer to the Albany Hospital.

Rupture of the uterus may take place from a variety of causes, as external violence, blows, falls or kicks. It may rupture from internal traumatism as from the application of forceps, attempts at version or the introduction of a hand into the uterus or by vehement muscular efforts to overcome some disparity between "passage and passenger" as by malpresentation, hydrocephalus, spina bifida, sacrococcygeal tumors, rigid os, contracted pelvis, tumors of pelvis and cicatrices, in which cases it is usually transverse through the lower segment. Or it may lacerate because

of some disease of the organ itself as interstitial pregnancy, bicornuate uterus, degeneration of the muscle, scars after Caesarian section, or rarely, tumors such as carcinoma and myomata. In the following case, for the privilege of reporting which, I am indebted to Dr. G. C. Madill, of Ogdensburgh, N. Y., we have to deal with the latter condition.

CLINICAL NOTES.

Mrs. M., twenty-six years of age, housewife.

Past History.—Patient has been married 5 years, but has never been pregnant. Menstruation has been regular but rather excessive. During the Fall of 1906 she had an attack of severe pain and some uterine hemorrhage and was ill for two weeks. From that time to present illness has been apparently perfectly well.

Present Illness.—July 8, 1907, she began to have pain in the lower abdominal region. During the night of July 8, she was taken with severe pain in the abdomen, vomiting and faintness. When patient was seen she showed every evidence of peritoneal hemorrhage and was advised to enter the hospital. On entering hospital patient was in the condition of shock.

Laparotomy was immediately performed. The abdomen contained a large quantity of blood and a tumor was found partially extruded from a rent in the wall of the uterus. The tumor was removed and the uterus amputated above the cervix. Patient made an uneventful recovery and was discharged from the hospital July 27, 1907.

Pathological Report.—The material for examination consists of two masses, one a uterus the other a tumor mass.

The tumor mass is roughly spheroidal measuring 12 x 10 cm., has no capsule, is somewhat coarsely lobulated, exceedingly firm and reddish gray in color. In the center there is a cavity, the result of cystic transformation. The cut surface presents a grayish smooth, glistening, translucent surface outlined here and there by denser fibrous areas. In places it shows necrosis and hemorrhage.

The uterus is greatly distorted; the only portion normal is the fundus to which are attached on either side the Fallopian tubes. These are cut short and the ovaries are not present. Uterus measures 8 cm. in length and 5 cm. across the fundus. The thickness of the wall at the fundus is about normal. The remainder of the wall is transformed into a thin fibrous membrane which in places is so thin that it is transparent and is freely torn. The outer surface shows a few adhesions. The inner surface is marked by an irregular interlacing network of fibrous tissue and muscle bundles. In several places this thinning of the wall involves the cervix which as such cannot be recognized. The mucosa which remains is transformed into a smooth, glistening membrane with small polypoid protuberances.

Microscopic examination of the tumor shows that it is composed of bands of smooth muscle and connective tissue coursing in various

directions, the muscular tissue in parts being cellular and deep-staining. Throughout the tissue extensive necrosis is present.

Anatomical Diagnosis.—Fibromyoma of uterus causing thinning of uterine wall and rupture.

It is not a simple matter to explain the sequence of events which led to the rupture of the uterus, but it would appear to be due to a thinning of the uterine wall (a pressure atrophy) caused by the pressure of a large, apparently submucous, myoma interfering with the blood supply. A careful review of the literature of rupture of the uterus as presented by the Index Medicus and the catalogue of the Surgeon-General Library fails to reveal a similar case.

BENDER HYGIENIC LABORATORY.

ANNUAL REPORT OF THE DIRECTOR FOR THE YEAR ENDING AUGUST 31, 1907.

To the Trustees of the Bender Hygienic Laboratory:

I have the honor to submit my report for the year ending August 31, 1907.

The Work of the Laboratory.—The routine examinations of all kinds are summarized in the following table:

ROUTINE EXAMINATIONS MADE BY THE STAFF OF THE BENDER LABORATORY FROM SEPTEMBER 1, 1906, TO AUGUST 31, 1907.

	Albany Hospital.	St. Peter's Hospital.	Child's Hospital and St. Margaret's House.	State Depart- ment of Health.	City Board of Health.	All Other Sources.	Totals.
Autopsies.....	36	4	17	.....	.....	78	135
Surgical Specimens.....	1,071	372	20	.....	.....	154	1,617
General Bacteriology & Clinical Microscopy...	85	45	2	2,170	3,126	297	5,725
Totals.....	1,192	421	39	2,170	3,126	529	7,477

The only important change in our routine work has been the withdrawal of the water examinations for the State Department of Health. These are now made by the State Hygienic Laboratory. In place of this work we give two courses of instruction

in bacteriology to such health officers of the State as care to attend. These courses are given twice a year, each course covering a period of one week.

Laboratory courses for undergraduates of the Albany Medical College have been given as follows:

1. *Normal Histology*.—Drs. Beilby and Douglas, six hours a week.

2. *Pathology and Bacteriology*.—Drs. Pearce, Baldauf, Schaille, Robinson and Hacker, seven and a half hours a week.

3. *Clinical Microscopy*.—Drs. Laird and Rulison, two and a half hours a week.

4. *Surgical Pathology*.—Drs. Elting, Carey and Sibley, two and a half hours a week.

5. *Histology and Pathology, in connection with the course in Obstetrics*.—Drs. Lipes and Douglas, two and a half hours a week.

6. *Anatomy and Pathology of the Nervous System*.—Dr. Archambault, two and a half hours a week.

7. *Experimental Physiology (Second year)*.—Dr. Jackson, four hours a week.

8. *Demonstrations in Physiology (First year)*.—Dr. Becker, two hours a week.

It will be seen that the only changes have been the introduction in the first and second years, of courses in experimental physiology under the direction of Drs. H. C. Jackson and E. W. Becker.

Among those who have availed themselves of the opportunity to work in the laboratory for considerable periods of time are Dr. H. S. Rowe of Ballston, Drs. W. L. Huggins and S. S. Ham of Schenectady, Drs. A. H. Traver, W. H. Kelly and H. P. Carpenter of Albany, Messrs. J. L. Donhauser, E. E. Tredway, S. Friedman, R. P. Harris, E. S. Haswell, Nelson Fromm, W. H. Davidson and E. W. Jackson of the Albany Medical College. These have assisted in the routine work of the laboratory, pursued special lines of study or engaged in research work.

Investigations completed during the year are as follows:

1. Dawes, S. L., and Jackson, H. C., The Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate Used Hypodermatically. *Journal of the American Medical Association*, 1907, XLVIII, 2090.

2. Baldauf, L. K., An Investigation of the Nature of Proteid-Soap Compounds and of the Micro-chemical Staining of Pure Fats and Lipoids by Scharlach R and Sudan III. *Journal of the American Medical Association*, 1907, XLIX, 642.

3. Chandler, G., and Baldauf, L. K., Lipoma of the Intestine Occurring in a Child Thirteen Months Old and Causing Symptoms of Intestinal Obstruction. *Annals of Surgery*, 1907, XLV, 836.

4. Jackson, H. C., and Pearce, R. M., Experimental Liver Necrosis. I. Hexon Bases. *Journal of Experimental Medicine* (in press).

5. Pearce, R. M., and Jackson, H. C., Experimental Liver Necrosis. II. Enzymes. *Journal of Experimental Medicine* (in press).

6. Pearce, R. M., and Jackson, H. C., Experimental Liver Necrosis. III. Nitrogenous Metabolism. *Journal of Experimental Medicine* (in press).

7. Jackson, H. C., and Pearce, R. M., Experimental Liver Necrosis. IV. Nuclein Metabolism. *Journal of Experimental Medicine* (in press).

8. Jackson, H. C., and Pearce, R. M., Experimental Liver Necrosis. V. Fats and Lipoids. *Journal of Experimental Medicine* (in press).

9. Archambault, L., The Inferior Longitudinal Bundle and Geniculo-Calcarine Fasciculus with Remarks on the Stratum Sagittale Extremum Temporo-occipitale. (Publication deferred.)

10. Archambault, L., and Baldauf, L. K., A contribution to the Pathogeny of Spastic Rigidity of Childhood. *ALBANY MEDICAL ANNALS* (in press).

11. Archambault, L., and Sawyer, H. P., Cerebral Abscess as an Associated Lesion in Acute Purulent Meningitis. *ALBANY MEDICAL ANNALS* (in press).

12. Shaw, H. L. K., and Baldauf, L. K., Congenital Stenosis of the Duodenum; Report of a Case. *Archives of Pediatrics* (in press).

13. Hacker, C. W. L., Concerning the Appearance of Glycuronic Acid in Certain Conditions of Diminished Oxidation. (Publication deferred).

Of these investigations, the fourth to eighth, inclusive, were conducted under grants from the Rockefeller Institute for Medi-

cal Research; the second and thirteenth under grants from the Committee on Scientific Investigation of the American Medical Association, and the greater portion of the expense of the investigations in Neuro-pathology was met by Dr. Henry Hun.

Changes in the Staff.—Dr. L. K. Baldauf resigned June 1st to accept a position as Assistant City Pathologist of St. Louis, Mo., and in his stead has been appointed Harold Paine Sawyer (B. S., Univ. of Alabama, 1902; M. D., Johns Hopkins Medical School, 1906). Dr. Frank George Schaible resigned July 1st in order to become Assistant in the Clinical Laboratories of the Manhattan State Hospital, Ward's Island, N. Y., and has been succeeded by Clinton Benjamin Hawn (B. S., Union University, 1903; M. D., Albany Medical College, 1906). Dr. Fletcher Robinson resigned June 1st in order to become Pathologist to the Mercy Hospital, Pittsburg, Pa., and was succeeded by C. W. L. Hacker (M. D., Albany Medical College, 1905), who for the past year has been connected with the laboratory as Pathological House Officer to the Albany Hospital. To this latter position for the year ending June 30, 1908, William Andrew Krieger (M. D., Albany Medical College, 1906) has been appointed by the Board of Governors of the Hospital.

I wish here to express my appreciation of the great benefit to the laboratory of the assistantship in neuro-pathology supported by Dr. Henry Hun, and of the two assistantships in surgical pathology supported by Drs. Albert Vander Veer, W. G. Macdonald and Arthur W. Elting. To one of the latter positions, newly created, has been appointed Dr. T. Frederick Doescher (M. D., Albany Medical College, 1906.)

I wish also to express my appreciation of the services of Dr. J. Lewi Donhauser who for the greater part of the year acted as voluntary assistant and who has recently been appointed Resident Pathologist to the Pennsylvania Hospital of Philadelphia.

Mr. George Edward Willcomb, S. B., continues as Assistant Chemist and Bacteriologist in charge of the Albany Filtration Plant.

Improvements.—Aside from necessary repairs the only important changes have been the installation of a projection lantern and the proper curtaining of the lecture room for the use of the same.

The Bender Laboratory Club.—This organization, now in its third year, has continued most active. The guests during the past year were Dr. Eugene L. Opie of the Rockefeller Institute for Medical Research, New York, who presented a review of his work on the "Enzymes of Phagocytic Cells in Inflammatory Conditions," and Dr. David L. Edsall, Assistant Professor of Medicine at the University of Pennsylvania, who discussed "Occupational Poisonings."

Respectfully submitted,
RICHARD M. PEARCE,
Director.

October 1, 1907.

ALBANY MEDICAL ANNALS

Original Communications

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

AUTHOR'S DEDICATION: To my friend who thro' years of sorrow made me
"His Guest in the Name of Christ."

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
DR. A. R. MOULTON, FIRST ASSISTANT PHYSICIAN, PENNSYLVANIA
HOSPITAL FOR THE INSANE, PHILADELPHIA PA.

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[DR. MOULTON'S NOTES.]

While I was not in immediate care of "Ruth Campbell," only exceptionally, I was the senior assistant physician of the Worcester Insane Hospital, and was familiar with her remarkable case during her entire stay there. Much of this time she was apparently *demented*, and was as dependent as a helpless baby. After a lapse of from twenty to twenty-seven years, most of the scenes and incidents she describes are fresh in my memory, and I recall nearly all the persons referred to, for though she was lethargic and silent, her caretakers were *impressed* by Ruth, and by all that concerned her. It is perhaps permissible to state that the "Dr. Hall" mentioned in the story was Dr. John G. Park, the superintendent, who though having many administrative duties in a large hospital, was an example to his staff of

fidelity to individual patients, and who was ever seeking for means to please and benefit them.

"Dr. Field" is the name given in the story to Dr. Everett Flood, now the superintendent of the Massachusetts Hospital for Epileptics. To Dr. Flood more than any other physician does Ruth owe her recovery. I say to any other *physician*. The debt to "Mary" is equally great. This girl, coming from a reformatory, herself terribly afflicted, was of the utmost help, and much that Dr. Flood accomplished would have remained undone or deferred, had she not blazed the way.

Dr. Flood's devotion to his patients has been long noted, but his untiring efforts in Ruth's behalf were often the subject of conversation by his associates. Denying himself rest and recreation, he seemed possessed with the idea that this patient *must* get well through his endeavors, and that she would not recover without them. And he stimulated nearly all about him with the same idea. It is the hope of the writer that this commendation of one still actively in harness will not be regarded as out of place.

Ruth's story should teach us that in truth where there is life, even probably a negative one as in this case, there *is* still hope; also that seemingly the most demented patient may be stung to the quick, perhaps irreparably wounded, by a careless remark, and that an encouraging word may be the turning point towards recovery.

A. R. M.

[DR. FLOOD'S NOTES.]

The scenes described in the enclosed paper were enacted at the Worcester Insane Hospital between the years 1880 and 1887. The patient had been fully recovered at least a year before she attempted to write her recollections. This she did after some of her friends had listened to her interesting account and had urged her to write her then vividly recalled experiences.

The story was typewritten and circulated among the most interested friends. Later it was printed in a crude form by an amateur printer, a patient in a Massachusetts Hospital, and a few copies given away. Since then the manuscript has been filed. The writer of this story has remained well for twenty years and has been engaged in a useful and self-supporting occupation. The type of melancholia which she suffered is not unusual,

but it appears to me that this sort of a truthful, detailed account of the patient's point of view has not been put in print before. She long ago consented to allow her story to be printed if it was thought that any one would be helped by reading it. The crudeness of the story needs no apology. At the time she wrote it she was filled with the idea that she would soon lose the vividness of her recollections, and that perhaps her experience was a valuable one for others to know. It was put down in very brief space and has had no revision.

E. F.

CHAPTER I.

"Oh kind souls
Pause in your praying and listen
Perchance if near you,
For want of one tender hand,
Some lonely soul may be drowning
Just within sight of the land."

Ruth Campbell stood beside the bed, where lay her little boy of three summers. He was sleeping sweetly, his cheeks tinged with the flush of health, unconscious of the terrible shadow that was over and around him. The mother stood with clasped hands and tearless eyes; she tried to speak but no words came; her grief was too deep for utterance. Must she leave him, the baby who had hardly been away from her sight, since his birth? How many times in happier days, she had clasped her children closely, praying that God might spare them to her; and now, she was going to leave them,—perhaps never to see them again.

Will, the older son, was away from home, and she had not seen him for weeks. In her right mind, no one could have won the mother's consent to part from her children; but a cruel spell had bound her, and she could not throw it off. She had struggled, as one might with a deadly foe, for life. For weeks and months, her friends had done all in their power to save her.

Her husband had noticed for some time, with great anxiety, that her health seemed failing. The certainty that his wife was insane was a terrible blow to George Campbell. Always thoughtful for her, he had redoubled his efforts to lighten her cares, hoping she would soon be better. He had taken her from place to place, thinking the change might be beneficial. He had secured the best medical advice in his power to obtain. He had been

patient and had tried hard to keep his family together but his efforts were in vain. Almost broken down by his misfortune, there seemed no way left him but to place his wife in an asylum for the insane, where she could be cared for; thus leaving him free to work for his children.

There is never a home so sheltered that care and sorrow do not find an entrance. We all have our individual sorrows of which the world does not know.

“He prayeth best who leaves unguessed
The mystery of another’s breast.
Why cheeks grow pale, why eyes o’erflow,
Or heads are white, thou need’st not know.
Enough to note by many a sign
That every heart hath needs like thine.”

In good health, doubtless, Ruth’s troubles would have been easily overcome; but she brooded over them and magnified them until they assumed large proportions. Then strange delusions came to torment her. Day and night they haunted her, until life became a burden. They became fixed in her mind, and she could not rid herself of them. In vain she prayed and tried to forget her troubles. Turning to her Bible for guidance, she read: “Like as a father pitieth his children, so the Lord pitieth those that fear him;” and again: “Come unto me all ye that labor and are heavy laden, and I will give you rest.” The thought came, “I am looking for the loving, tender words. Perhaps they are not meant for me.” Then she read of a God more terrible than any army with banners, and the way so straight and narrow, that, although many shall seek to enter in, few shall be able.

Looking backward over her past life, it seemed to her she could see no good done. She had wasted her opportunities. She had lived in so narrow and selfish a way, God must be very angry with her. She did not know that being tired and sick had turned her brain. Although most of her troubles were imaginary, they seemed real to her. She had always thought of God as a kind and loving Father, who, in his wisdom, could not do wrong. Surely he had not changed. The fault must be in herself! “Throw yourself into the arms of Jesus,” her pastor had said, “He died for you, and he will save you.” She prayed: “Lord, here am I, humble, contrite, cast me not from you;” but the burden refused to be lifted.

Another said, "Have faith and your sorrows will all pass away;" and in her agony, she cried, "Lord I believe, help thou mine unbelief!" She could not sleep, and she did not care for food. She thought her terrible suffering would end her life. Could she die, and leave her children?

No, she must live for their sakes, and for her husband. If she could not be happy, she would try to appear so. The effort was a failure, and after a while she ceased to wish to live. She had yet to learn that we may live through all things.

She knew she was making others very unhappy, even the children. The mother that had been so cheerful, although she was even more tender and loving, was sad and gloomy; and they felt the change. She could not fix her mind upon her household duties. The home that had been orderly and comfortable, now bore witness to a change in the mistress. Her friends tried to reason with her, but she was powerless to do as they wished. One would say, "I think, if it were I, I could throw off my troubles." Another said, "Rise above this,— be yourself." Her only answer was, "I cannot;" and when they bade her think of her children, she said, "What I cannot do for their sakes, is beyond my power to do." Her physician told her to have courage: "You are sick," he said "and that affects your mind; you will soon be well and happy."

When the asylum was first mentioned to her, she was terrified, and begged piteously not to be taken there. More than ever she longed to die. Then came the thought to end her wretched life. In happier days she had thought this a most cowardly thing to do. However, the thought once entertained, soon lost its hideous form, and seemed, to her bewildered mind, the one way out of her troubles. She decided to try, but fortunately was detected in her attempt. This made it necessary that she be closely watched, and resulted in her friends' deciding to place her in an asylum for the insane. When she found she could have no chance to end her life, she consented to go there. The children must be cared for, and, if she could not work for them herself, she must not be a hindrance to their happiness and comfort. Therefore, for their sakes she would go.

Some may say, if she could reason so clearly about this matter, she might in regard to other matters as well. Those who have made this terrible disease a study know that a person may be very insane in some directions, and perfectly sane in others.

It is doubtful if she fully realized what she was doing. Suffering had made her submissive. She would go away, where she would not be a burden to those she loved. If she could not die now, she would go away by herself and wait. Yet why should she be taken to an asylum? She thought insane people were raving and dangerous. "I am not like that," she said; "but everything has changed." She could not see that the change was in herself.

Will, the oldest child, a boy of ten, had gone to stay a while with relatives in an adjoining town. His mother had said "good bye" to him with an aching heart; and when he saw her sorrowful face, he had said, "I guess I don't care to go, mother. I think I had rather stay at home." But she had urged him to go, thinking he would be happier. She said: "Be a good boy, and remember mother loves you." She could not help adding, "you can come back whenever you wish." Alas! poor boy, it was to be many a long day before he would have a mother's home again. No mother to smooth the rough places; no mother to come to with his troubles. God help him! Will he not "temper the wind to the shorn lambs?"

And now the time had come for her to go. It was early in the morning, and Ruth had allowed her friends to dress her for the journey. Her husband was to accompany her, leaving little Walter to be cared for by a friend until his return. Ruth stood gazing at her child,—perhaps for the last time.

Mothers, you who lay your children away, safe in God's keeping dry your tears, and be thankful it is no worse. Poor Ruth, after all her struggles, all her prayers, it had come to this!

Was God blind, that he could not see? Was he deaf, that he could not hear? or, had he cast her off? She must bide her time. He works in his own good way.

"Come, Ruth, we must go now, the coach is waiting." It would be hard to say which was the greater sufferer, the husband or wife, in this great trial of their lives. She heard the summons as one in a dream. She bent over her child, but did not kiss him lest she might awaken him. Through all time, perhaps through all eternity, that dear baby face will go with her. Her husband led her away, placed her in the coach, and took a seat beside her. The driver closed the door, snapped his whip, and she was gone. Will it be forever?

CHAPTER II.

Alone among strangers. The thought is not a cheerful one to those who have health and happiness; certainly it was not to Ruth, sick, sorrowful and crazed; her disordered mind was sure to see the worst side of everything. At home she had many friends who loved her, and they had been so kind, so tender, and so full of pity; it was no wonder the strange faces seemed to her cold and unfriendly. They saw so many sad faces every day, and heard so many tales of sorrow, that they had become accustomed to them. Ruth was only one more, one of the many. She would hardly have believed that there were so many insane people in the whole State, as were confined in that one building.

She remembered the parting words of her husband: "Promise me, Ruth, that you will do as the doctors wish. Try hard to get well. I will take good care of the children, and we will all be happy together again sometime." She could see the tears on his pale face, when he said: "I will come soon to see you." A kiss—"Good bye, dear Ruth"—and she was left alone.

A feeling of desolation came over her. Some one took her wraps and asked her to be seated. Mechanically she obeyed. The place was very quiet; she was in a large hall, with doors on either side, which opened into small rooms. She could hear the hum of voices, and, occasionally, some one passed by her. A pleasant-faced young lady appeared to have charge of the place. Once she sat down beside Ruth a few moments and spoke kindly to her. A woman of middle age, passing through the ward, stopped, and looking at Ruth asked, "Who is she, a new comer?" "Yes; I pity her," was the reply.

"What do you pity her for? You don't know who she is."

"I pity her; whoever or whatever she is,—she is a human being."

"You don't know who she is." The speaker did not weigh her words.

Without doubt they were thoughtlessly spoken, but sank deep into a quivering, aching heart. Ruth had been told there were kind, Christian women in the hospital, who would comfort and help her. The treatment she received did not seem Christlike. She doubted if there be a Christ, he seemed so far away.

After a while a woman entered, holding in her hand a bunch

of keys. She went directly to Ruth and said, "Come with me." Ruth ventured to ask the girl who had spoken so kindly to her, if she could not be allowed to stay with her; but was told by her that there were no vacant rooms on the ward. Frightened and trembling, she followed up the long flights of stairs, through doors that were unlocked and locked, as they passed. They entered a ward that seemed exactly like the one she had left, and she was taken into a room which the woman in charge had told her, would be hers, asking, "Is it not pleasant?"

Alas, poor Ruth! nothing seemed pleasant to her,—a palace or a hovel, it did not matter.

The room was scrupulously neat. The hard finished walls were delicately tinted. A narrow iron bedstead painted white, and furnished with springs, a nice hair mattress, soft, warm blankets, snowy sheets, pillow slips and spread, a bureau and wash-stand, a mirror, an easy chair, and a bright strip of carpet upon the hard, polished floor were the furnishings of the room. The woman left her alone for a short time, but presently returned with a pencil and paper in her hand. Seating herself upon the broad, low window-seat, she proceeded to take an inventory of her patient's clothing, a very strange thing for her to do, thought poor bewildered Ruth. What could it all mean? She did not have long to think about it; for soon a bell rang, and a woman entered and said, "Supper is ready, come with me."

"I do not wish for any," Ruth replied.

"You must come. We all have to eat here."

Suddenly Ruth remembered, what for a time she had forgotten, that once when she had refused to eat, she had been told, they had a way of making people eat in hospitals. It seemed to her that the attendant spoke in a very significant manner. She said no more, but followed to the dining room. There were several long tables, with chairs on either side, filled with patients, old and young. Ruth sat down in the place allotted her. She thought they were all staring at her, and that their faces seemed cold and unfriendly. She thought of the dear home faces, so kind and loving. The attendant reminded her that she was not eating; so she choked down the food placed before her, and, as soon as possible, hurried to her room.

Seating herself in a chair beside the bed and burying her face on it, she gave vent to her misery in uncontrollable weeping. Why had she consented to come to this dreadful place! She

had thought it her duty; but Oh, she was so homesick, so desolate! She could hear her baby crying for her, and his father trying to comfort him. She thought of her boy that was waiting to return home;—what would he say, when told where she was. Why had she not had a stronger will, instead of allowing her troubles to overpower her? Now, it was too late!

Her sobs attracted the attention of patients on the ward, and, pushing the door open, they crowded around, gazing with curious eyes upon her. A tall, fine looking woman placed her hand on Ruth's head, and said kindly, "I am very sorry for you;" then called in a louder voice, "Auntie, where is Auntie Harrington? Tell her to come here; she can comfort this poor woman if any one can." In a few moments Ruth heard a voice say, "Leave me alone with her, please; perhaps she does not like to have so many around her." Then, quietly closing the door, she seated herself upon the bed saying, "What is it? Can I help you?"

Ruth raised her face and looked at her would-be-friend. For a moment her tears were checked, and a feeling of surprise came over her; for she saw in the woman before her, the exact counterpart of an aged relative, that she had greatly respected and loved, who had died a few years before; the same slight figure, the same face, the black dress and cap, the quiet and gentle manner. Had Grandma Reed come back again?

"Won't you tell me why you are feeling so badly?"

"I am so wretched! Everything has gone wrong; I want my children; I wish I had not come here,—what shall I do?"

"Be calm, my child; you are sick. Perhaps you will soon get well and go home."

"Sick? yes I am sick of living!"

"Jesus will help you;—have you asked him?"

"He will not help me;" and the tears started afresh as she thought of the hours spent in vain petitions.

Auntie Harrington was used to scenes like this. "Let her have her cry out. It will do her good," she thought. Patiently she sat there, smoothing Ruth's head with her soft, wrinkled hand. Gradually the sobbing ceased, and Ruth was quiet. When she again lifted her head, she was alone.

The doctor in charge of the ward gave her a call, and soon after the attendant came and assisted her in undressing saying, "It is better for you to retire early."

Ruth dreaded the long, lonely night before her. She had slept but little for weeks, and surely she could not sleep in this strange place. However, with the wish that she might never rise again, she laid her head upon her pillow. She thought that, if she could go away, where she would not trouble her friends, it would not matter what she suffered, so long as they were better off; but she had not counted the cost. Now she began to realize what she had done. Her home was broken up; her children motherless; her husband, what would he do? Her imaginary troubles were, for the time, eclipsed by the real, only to assume larger proportions, when the excitement caused by leaving home was over.

She heard a clock strike nine, and as the last stroke died away, another sound grated harshly upon her ears. The attendant was locking the doors for the night. As she came nearer, Ruth could hear the good-nights given and returned. Finally, her door was opened, and "Good night" was said to her; then the key was turned, and she was behind bolts and bars. She wished they might never open the door again. She thought, "I shall be alone until morning." Scarcely had an hour passed, however, when the door was again opened and two young ladies entered, one carrying a lantern, and the other, a tray, upon which were small tumblers. One of the tumblers was handed to Ruth, with the words, "The doctor sent this medicine to you." She drank it without a word, and was left alone. The medicine was chloral, and it soon had the desired effect. Ruth slept soundly. The night-watch, on her hourly rounds, looked in upon her, but she did not waken. Four hours freedom from grief and misery,—blessed sleep.

When the effects of the chloral had passed away, Ruth awoke with a start. Her mind was in confusion; her head seemed ready to burst. She opened her eyes and the moon shining in revealed the iron bars across the window. She uttered a piercing scream,—another—and another, awakening all within hearing. Some one in the opposite room took up the cry with groans that might have come from the lower regions. The voice next door called, "George! George!" Ruth thought "She is mocking me. How does she know my husband's name?" The night-watch came and bade her be quiet: "You are disturbing others," she said.

The night passed away, as all nights will, and soon after five o'clock the attendants were heard on the ward. Exactly at six o'clock, the doors were unlocked, and Ruth was told to rise and dress. She thought she would rather lie there forever than face those strange people again; but the rules of the place must be obeyed. After completing her toilet she seated herself by the window to wait for what might come next. The bell soon rang for breakfast. Ruth wished that they might forget her; but no, the attendant came for her and she was obliged to go. When the meal was over, she again hurried to her room and closed the door. She wished that she might fasten it but the lock was upon the outside only. There was not even a latch. She tried to put her room in order; then went to the window and looked out. In happier days, she would have called the building a splendid structure, now, it seemed a dreary prison-house. She wondered what the low, stone building opposite could be. Farther on she saw the waters of a large lake, reflecting the light of the sun, which shone brightly upon it that summer morning. To Ruth it conveyed the thought of a resting place, where one might go to sleep and never waken. The forenoon passed slowly away. The doctor gave her a call, and, speaking pleasantly, asked her a few questions. He advised her to join the other patients on the ward, saying "you will find some pleasant people among them." He offered her books to read, but she did not care for them. She passed the time gazing wistfully, at the lake and the long trains of cars, which, now and then, passed in the distance. Early in the afternoon an attendant entered the room, and, handing Ruth her hat and shawl, said, "We are going out for a walk and the doctor wishes you to go with us." Ruth felt like declining but glancing at the lake, said "I will go."

(To be continued.)

RECENT PROGRESS IN THE TREATMENT OF EPILEPSY.

*Read before the Steuben County Medical Society at Bath, N. Y.,
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Although epilepsy is probably as old as the human race, its entire etiology remained a profound mystery until less than half a century ago when fragments of light began to appear and which are now sufficiently numerous to make our knowledge of the causes of "the strangest disease of human history" more satisfactory than it has been since the public care of epileptics was first undertaken in 1867. In 1890 one state after another in the United States, following the lead of Ohio, began to make provision for epileptics who needed special forms of public care as much as do the insane, the deaf, the dumb, the crippled, the tubercular and the blind.

Happily for the advancement of medical progress the time has gone when we may speak simply of "epilepsy." The epileptologist of to-day who would be accurate speaks of the "epilepsies" instead.

We now know that epilepsy appears under as many forms, varieties, sub-varieties, types and divisions as it has causes; and that its causes are exceedingly numerous.

Epilepsy is not a disease whose etiology can be traced to a single factor as we can do in typhoid fever and in tuberculosis; and so far as the laboratory has given us light in the study of the disease to this time, we know that sooner or later it affects certain areas of the brain in every case, and the entire brain in some cases; although the primary cause may lie in one part of the body in one case, in another part of the body or in some special organ in another case, and in still another group of cases which comprise the greater majority of them all the cause is to be found only *at intervals* in the unstable tissues or secretions of the organism. In but few cases may the causes be due to a specific

infection alone or to the action of a definite toxine originating in the digestive tract, but it may exist *because* of such toxines *plus* certain congenital cell conditions in the nervous system. In other words, epilepsy is an hereditary or development disease probably as often as it is a disease due to a specific agency or toxine of some kind, while the two combined are more apt to induce it than either acting alone.

It has not been long since the epileptic was regarded with gross mysticism, superstition and ignorance and inhumanly treated. Those who had it were charged with being "possessed of a demon." This mysticism and ignorance still exists in some of the countries of the far East. Recently a celebrated American surgeon told me that when he stepped into the street in Constantinople to ascertain why a crowd that had gathered had suddenly dispersed, it was because a man who was acting strangely had fallen in a fit, and that for the natives to look upon such a victim was sure to bring "evil luck."

Nothing worthy the name of science was done for the epileptic until 1849, when a small mixed asylum was founded near Bordeaux in France. Twenty years later Bethel Colony at Bielefeld in North Germany was founded—constituting the parent Colony for Epileptics, and which is the largest epileptic institution in the world. There are many smaller institutions in Germany and in England for the same purpose, a very admirable one being the Colony at Chalfont, St Peters, not far from London.

Seventeen years ago the movement for the humane care of epileptics crossed the Atlantic and was taken up by Ohio, which founded a hospital for sane and insane epileptics at Gallipolis. New York State followed next with The Craig Colony for Epileptics at Sonyea—which is still the only true "Colony" in the United States—then Massachusetts, then New Jersey, then Texas, Pennsylvania and Indiana, and now several other States are on the point of granting aid to this class. But notwithstanding all this progress it is only a drop in the bucket, for out of a total of 150,000 to 160,000 epileptics in the United States less than 4,000 are at present under suitable care. What has been done for the insane should be repeated for the epileptic, and before another half century passes every State in the United States should have a colony, hospital or sanitarium for dependent epileptics.

EPILEPSY A COMMON DISEASE.

It is a mistake to suppose epilepsy to be an uncommon disease. It differs so radically in its manifestations from all other diseases that many epileptics remain unrecognized for years. In some cases the attacks are so mild as to completely escape observation, or else they occur wholly by night and no one—not even the patient—be any the wiser, especially if urine is not voided, the tongue not bitten nor any unaccountable muscular soreness felt the next day to tell the tale of a nocturnal seizure. Morning headaches at intervals, a sore or lacerated tongue, a bad taste in the mouth, disturbed dreams, unexplained bruises or even fractures, should cause a suspicion of nocturnal epilepsy. A man of fifty-eight, syphilitic, awoke one morning to find that he had a fractured femur, and when it was later established that he was accustomed to nocturnal grand mal attacks it was thought that the fracture was due to muscular contraction, especially since there were no bruises and no fall so far as could be ascertained.

It has been estimated that one person in every five hundred is epileptic. When I wrote "Epilepsy and Its Treatment" in 1904, I was successful in securing statistical data relative to 67,000 cases of epilepsy running back to 1853, or a period of fifty-one years. I have studied the subject even more closely since then, and I am convinced that if all cases of epilepsy could be counted we would find not less than one epileptic to every three hundred of the population at large. I have time and again witnessed psychic epileptic seizures of so inconspicuous a character that an unskilled observer might absolutely fail to notice the presence of the seizure though he might be looking at the patient at the time. Such attacks are commonly known as "flashes," "darkness," "weaknesses," "faints," "spells" and the like; and they differ from ordinary Grand Mal and Petit Mal attacks in manifesting no muscular commotion of any kind or degree whatever. They are subjective rather than objective. Failure to recognize and count these as epileptic makes the apparent number of epileptics smaller.

THE MISSING LINK IN THE STUDY OF EPILEPSY—PATHOLOGY.

I am familiar with the work that has been done in epileptic pathology during the past fifteen years or so in this country and

in Europe. A goodly number of skilled investigators have been active in this field. Some of them have asserted a *definite pathology in epilepsy*. Prout and Clark in "Epilepsy and Its Treatment" say: "The most striking changes presented by the cortex of the epileptic are found in the cells of the second cortical layer—cells which are distinctly sensory in type. In patients dying during a period of status epilepticus these changes are most decided. The cells are swollen in many instances to twice their normal size, the nucleus being especially large and granular, with indistinct outline. The limitations of the nucleus are often difficult to determine. The most striking changes are found in the nucleus. In addition to being granular, swollen and poorly outlined, the nucleolus is often absent, having been abstracted from the nucleus in process of section making. This occurs in status cases two or three hundred times more frequently than in sections of the normal brain." These same investigators say much more along the same line but the gist of the pathology of epilepsy, as they appear to conceive it, lies in the part quoted above.

In the light of my experience in the study of some 4,000 cases and the results of more than 250 autopsies made at The Craig Colony in twelve years, I doubt that this view of the pathology of epilepsy covers the problem in its entirety in all cases—or even in many cases. I am more willing to believe that the changes described by pathologists as having been found post mortem in brains of confirmed epileptics *did not primarily exist as a cause* of the epileptic seizures, but appeared later wholly as a result of such seizures. If that is true pathologists have mistaken results for causes. It is notable that the pathological conditions described above have never been found at the beginning of epilepsy, and if they are not present at the outset how could they be the cause of the disease?

PATHOLOGICAL WORK AT THE CRAIG COLONY.

In my judgment he who speaks of the "Pathology of Epilepsy" would give expression to a more scientific phrase should he speak of the "Chemical-pathology of Epilepsy," provided he did not include cases due to gross organic lesions. Of late years we have re-organized the trend of laboratory work at The Craig Colony by turning aside from a wholly absorbing study of dead

matter from the post mortem table to a far more complex study of tissues, secretions and excretions from the living body, all studied conjointly with seizures during the epileptic's life. If there be a pathological basis definable in cases of idiopathic epilepsy, I believe that chemistry combined with physiology discriminately employed during life will show it; and the scalpel, staining reagents, and the microscope are not competent to reveal it *after* death.

Why will a strong, robust and seemingly healthy man go days, weeks, even months without a seizure and then begin to have headaches, become unaccountably irritable, desire to be let alone, become quarrelsome and faultfinding, face flushed, eyes bright, loquacious and finally unendurable to those about him, only to end this premonitory state that is so constantly repeated with an epileptic seizure or with a series of them? The auto-toxic process is repeated with similar results—self poisoning, the same subjective and objective symptoms, a fit, neutralization of the toxine—a normal period—and so on in rhythmic cycles until epileptic dementia is the end in some, cure in others, and no apparent change in the mentality of others. Let a patient of this type die in an attack—take his brain and remove that part of it that governs the area from whence the fits had their external origin—and what do you find? Nothing save a condition of cell vacuolation that as readily follows an ordinary well-marked normal fatigue. Now take the same individual just prior to the period when an attack is due to appear, and when the indications of a seizure daily grow in intensity until the fit neutralizes the epileptic virus—what should the proper chemical research reveal? It seems now that if we could find what tissues, secretions or excretions to search from the standpoint of the purely chemical pathologist, we should sooner or later find a definite poison whose presence in the system *beyond the tolerating point*, is capable of creating the gravest epileptic phenomena. So at Sonyea we have become chemical pathologists instead of deadhouse pathologists only. But we do not decry the latter; we still make autopsies and a diligent search in every case for any organic condition capable of producing such phenomena.

So far as I am aware the Colony at Sonyea is the only institution in the United States that possesses the legal right to make an autopsy on the brain and spinal cord of every patient who dies there and who was supported at public expense; and I regard

these things—the study of living matter, tissues, secretions, the psychic life, its power, its changes, the organic life, its capacity to resist, its weak spots, so to speak; and the legal right to make an autopsy in so many epileptics—as two of the most promising steps in the study of epilepsy that have arisen in some years.

THE PASSING OF BROMISM.

No greater reform in drug administration has ever taken place than in the method of administering the bromide of potassium that under former methods of usage did more to injure the cure of epilepsy than can readily be imagined. I contend that the bromids have contributed nothing to the curability of epilepsy. If we accept the statements of such men as Nothnagel, Laehr, Ackermann, Dana, Wildermuth, Habermas, Alt, Turner and others of equal opportunities we may be surprised to know that the percentage of cures in epilepsy is less to-day under free Bromism than it was prior to 1857 when Laycock first used the drug in this disease. Some of the writers of seventy-five to one hundred years ago claim that thirty-eight to fifty per cent. of all epileptics could be cured; but the better classification of to-day, the sifting of false fits from the true, would doubtless reduce the higher figures of the remoter period to about what they are conceded to be to-day, viz., from seven and one-half to ten per cent.

I have known scores of traumatic epileptics to take 120 to 160 grains of bromid in twelve hours for years at a time. I have seen many scores of cases due to autointoxicants taking doses equally as large when a diametrically opposite form of treatment was indicated.

I have seen scores of men and a few women whose epilepsy occurred between the fortieth and fiftieth years and due to "food poisons" taking bromid in doses large enough to make food-poisoning doubly efficacious in causing convulsions when an opposite course of treatment was demanded—when *reconstruction* and not *destruction* of nutrition was to be desired. Errors in metabolism will never be corrected by excessive bromid intoxication.

If the bromids are used at all do not give to exceed fifteen to twenty grains a day and increase to that amount so slowly that Bromism will not appear. It is unnecessary to cause bromic acne to get the physiologic effects of the drug. Five grains

three times a day given on *scientific principles* are of far greater value than twenty grains three times a day given without due heed to eliminative precautions.

CONTROL OF THE PATIENT IS ESSENTIAL IN TREATMENT.

A point of great value in treating an epileptic is to be able to control his daily habits in all respects. This cannot be done by seeing the patient once a week or so at the office. You may lay down the most absolute and specific directions to certain patients but if you are not in a position to control all they do your directions are apt to go for nought. Some patients who have a real desire to get well will faithfully carry out every injunction you may lay upon them; but in my experience such persons are rare.

Epilepsy is essentially a disease of early life. More than eighty-four per cent. of all cases occur before the age of twenty years and children are not endowed with discretion, which makes it all the more essential that there should be a definite supervising power. It is well to remember that one indiscretion may undo all that has taken months to gain. Do not neglect to keep that fact before your patient's mind.

Another line along which progress has been made is that which has taught us that the epileptic is an unsatisfactory patient for office treatment alone, and that the nearer we control all he does, what he eats, his sleeping, bathing, recreation—everything—the more likely will he be to experience an arrest of his attacks or the absolute cure of his disease.

SURGERY.

The use of surgery in the treatment of epilepsy has experienced great fluctuation; it is popular to-day and a year or two hence almost forgotten. Then one or two brilliant results will revive its employment.

I believe surgery will enter upon a new era in the treatment of epilepsy after we have constructed a better classification of its forms based on a better knowledge of etiology. Why trephine a chronic epileptic with a marked neuropathic ancestry because the fits begin locally? Why trephine a traumatic epileptic fifteen or twenty years after the injury and after the patient's mind has been destroyed? It is best to inquire carefully into the history

of the patient before opening the skull and to watch the attacks for two or three months, having a trained observer write out complete descriptions of as many as possible. At Sonyea if we deem an operation advisable we *never* perform it until three months later or until we can study the patient's ancestry and the type and results of his fits in the uttermost detail. If there has been much mental impairment there is no use operating with a hope of cure, though amelioration might be obtained. A definite thing we have learned is that an operation performed this year may lead to an improvement so gradual that it may not become pronounced or cause a cure until several years. Do not look upon the operation as a means of *immediate* relief but as opening the way for cure or improvement some years later. In the meantime other forms of treatment should be vigorously kept up.

Surgery in several anatomic localities is valuable in epilepsy; operations on the brain being the most common; next being pelvic and abdominal operations in women and finally special operations in either sex, such as the removal of the old cicatrices, cervical sympathectomy; and the like. Two out of three confirmed epileptics under my care who were subjected to resection of the cervical sympathesis on both sides were cured. Not more than two or three per cent. of all epileptics are suitable for this operation.

I might recite points to show the degree of progress made in late years in the treatment of a disease that in my judgment will have an increasingly hopeful prognosis as each year passes; but I will say only this: When we recall the recoveries in tuberculosis to-day, compared with the rate that pertained twenty-five years ago, there is ample reason to justify the belief that within twenty-five years epilepsy will be cured as frequently as insanity is cured now—that is, in twenty-five to thirty per cent. of all cases. I do not mean to imply any possible relationship between the genesis of epilepsy and that of tuberculosis. I only wish to invite a study of the remarkable change in the prognosis of tuberculosis—due to improved methods of treatment—and to point the way to the need for similar improvements in the treatment of epilepsy.

AN ADDRESS

Delivered October 25, 1907, to the Albany Guild for the Care of the Sick, on the Occasion of Conferring Certificates upon Assistant Nurses, who Have Finished their Training with the Guild.

By J. MONTGOMERY MOSHER, M. D.

One day, some seventy-five years ago, a young lady who was riding for pleasure and exercise over the Hampshire downs in the South of England, noticed a shepherd vainly endeavoring to collect his flock, which were usually guarded by his dog. In reply to inquiries he stated that the dog's leg had been injured by a stone, and that he contemplated putting an end to his misery. This expression of his purpose aroused the compassion of the young woman, who at once sought out the dog, remained with him for several hours and applied dressings for the relief of his wounded limb. She repeated these ministrations as long as was necessary and had the satisfaction of witnessing the restoration of her patient.

This incident in itself does not appear unusual or extraordinary when related to an audience of the present day, but it had a deep significance in the light of the events which followed. The young lady was Florence Nightingale. The assistance she gave the dumb animal was the expression of the tender sympathy which was the controlling and guiding element of her nature. Her willingness to relieve suffering became known and she toiled among the poor whenever sickness or trouble called for relief. She was the pioneer in what is now known as "district nursing," and the incident of the shepherd dog, trifling in itself, has taken a place in history.

We may dwell for a moment upon the spirit which influenced Miss Nightingale in this humane work. She was the daughter of a wealthy landed proprietor and of frail physique. She was highly educated and prepared by lineage and by culture for the highest social circle of Great Britain. But she ignored the opportunities for a life of pleasure, and yielding to the instincts of her nature devoted herself to practical philanthropy. Ministrations of the kind she gave were unusual and novel. Visitation of the poor was of the most perfunctory character and ladies who occasionally drove about and presented flowers or fruit did so with

little consideration of the actual needs of sickness. The profession of a nurse was not recognized, and the women who assisted in hospitals were incompetent and degraded. But Miss Nightingale possessed that divine spark which we recognize as inspiration. Heedless of criticism she responded to the dictates of conscience. She had capacity for organization, and the help she gave the needy attracted favorable notice because it was discriminating and just.

In 1854 England was engaged in the Crimean War. The hardships of that contest were unprecedented. Supplies of clothing, food, surgical dressings and medicines miscarried and were lost, and "the commonest accessories of a hospital were wanting." Troops were frozen in the trenches, and when brought to hospital were tormented by vermin, and the pestilence of cholera and fever polluted the air. The only so-called nursing was done by orderlies, inexperienced soldiers often disabled by wounds or sickness. In their extremity the Government considered the need of a corps of trained women, a plan which had some precedent in the sisterhoods which followed the armies of the continent, but had never been recognized in England. A letter from the head of the war department to Miss Nightingale asking her to organize this work, crossed a letter from her volunteering her services, and she left home and comfort for the scene of desolation. It was a time for the making of heroes, and Sevastopol, Balaklava and Inkerman have been celebrated in song and story as the tests of human endurance and human bravery. After the war, at a dinner given to its military and naval officers, the guests were requested to write on slips of paper the name of the person whose services would be longest remembered by posterity, and these papers all bore the name of Florence Nightingale.

When Miss Nightingale returned from the war, broken in health, but undaunted in courage, her mind reverted to its original purpose, and her life has since been devoted to plans for the relief of the sick poor. In 1849, looking about for guidance in the cherished scheme of district nursing, she had made the acquaintance of Theodor Fliedner, a clergyman who had founded at Kaiserwerth, Germany, a Deaconess' Institution, after the manner of the Catholic Sisters of Charity. The chief duty of the deaconesses is the visitation of the sick and the poor in their homes. Candidates for the order are required to be between eighteen and forty years of age, to present evidences of good

character, and to undergo a probationary training of from six months to three years. After this they are permitted to engage themselves to the institution for five years, but no vows are required, and for reason they may sever the connection at any time.

The expression of sympathy for suffering is coeval with the Christian era. The first record is given by Cardinal Wiseman in his fascinating sketch of Fabiola, a patrician Roman lady of the first century, who celebrated her conversion by caring for the sick in her home. In the eighteen succeeding centuries the treatment of disease was an important duty of religious orders; monks were accredited with medical learning, and sisterhoods possessed whatever knowledge of nursing there was.

The modern era, in which nursing has been lifted to the dignity of a profession, and reflects credit upon its members, dates from the work of Florence Nightingale in England and Pastor Fliedner in Germany. The nurse of today chooses a vocation which is the outward and visible sign of the Christian spirit, and to which the noblest types of men and women have consecrated their lives.

With this brief retrospect of history the development of the nurse's work in Albany may be compared. In 1880 a number of charitably disposed ladies volunteered to make personal visitation upon the sick. Under the name of the "Fruit and Flower Mission" they carried delicacies, and occasionally supplied such necessities as bedding and clothing. They had no experience to discriminate between an actual need and a pretence of want founded upon idleness. The result was, in greater or less degree, a misapplication of charity more likely to harm than to aid its beneficiaries. Miss Nightingale tells of finding in great disorder a cottage which was usually neat and tidy. "La! now! why, Miss," said the cottage woman in explanation, "When the district visiting ladies comes, if we didn't put everything topsy-turvy, they would not give us anything."

In 1889 the "Fruit and Flower Mission" became the "Albany Guild for the Care of the Sick Poor," reorganized with a plan for the employment of trained nurses. Graduates of training schools of the first rank were employed "to instruct the families they visit, by example and by precept, to take better care of themselves and their neighbors, and to promote their own welfare and the public health by obeying sanitary laws and by practising

the simpler arts of domestic nursing." Training schools for nurses were organized in the Albany Hospital in 1896, in St. Peter's Hospital in 1900, and in the Homeopathic Hospital in 1903; so that during the last decade there has been great activity in the development of this work. As a result there has been a complete change in the practice of medicine and the care of the sick. Just as accuracy has been attained in the treatment of disease by the development of specialties among physicians, so a large part of the work imperfectly done by them has been delegated to the nurse, who has studied its requirements and elaborated its details, and nursing may also be considered a specialty. Her assistance at operations and in the manipulations incident to fevers and midwifery is now recognized as essential, and the physician who fails to employ a nurse in cases where her duties have been established by custom takes the chance of unpleasant criticism. All foreboding that she might assume his responsibilities and with little knowledge, become a menace, has been dissipated, and the station she has assumed reflects honor not only upon herself but upon the profession to which she has become so useful an ally.

The graduates of the hospital schools began the private practice of nursing and secured State recognition. As hospitals are mainly surgical so their training was more especially in surgery, and they show a preference for this work. It appeals to many; the cases are short and results are often brilliant; the mental and physical strain upon the nurse is brief, and compensation is adequate. After a short experience with the new order it was found that the field had not been covered. The well-to-do could employ the best nurses, the poor were under the protecting arm of the Guild, but people of moderate means, those who depend upon the daily income, independent under ordinary conditions, when prostrated by sickness were without resources to meet the cost of care and treatment, increased by the exactions of modern scientific methods. Nurses were needed who would sit patiently at the bedside during the course of a long illness, and would perform this duty at a moderate cost. This led to the establishment by the Guild on October 6, 1897, of a "Department of Visiting Nurses for People of Moderate Incomes." Assistant nurses were employed, who carried out the orders of the physicians under the personal supervision of the visiting trained nurse. The assistant nurses thus received practical instruction from the senior

nurse. In this department of the Guild are received applicants "who do not wish to take a hospital training," and they enter upon a probationary period of three months to determine their adaptability. At the end of two years, if the training and examinations have been passed satisfactorily, the Guild pin is given, and a certificate is conferred entitling the holder to register as a "Certified Nurse of the Guild." The Guild has spared no effort to perfect this department, and with characteristic purpose, has directed its energy to its practical aspects. A corps of lecturers has been invited from the physicians of the city, but this didactic feature has been kept subordinate to the training at the bedside. The suggestions given by physicians in lectures may prove valuable in directing attention to the important phases of disease, but no amount of instruction obtained in this way can replace the knowledge gained by the use of the hands and actual personal observation. There has been no cultivation of sentiment, but a judicial consideration of hard, cold facts, for it is known by the officers of the Guild that the correct administration of the stern necessities of life carries with it as a result, and not as a means, the realization of the highest sentiment. This is what stimulates the call for the nurses trained by the Guild, and has attracted attention to the Guild, of every city of the United States which has attempted to meet the same problems.

The certified nurses who go forth will probably consider two questions: the first, as to the exact station they will occupy; and the second, as to the rules of conduct by which they will be governed.

There are now in Albany three groups of nurses: undergraduates in hospitals, graduated registered nurses, and certified or domestic nurses. The work of the hospitals is done by undergraduates, and the wealthy and well-to-do employ the registered nurses. Certified and domestic nurses are needed, and the demand for properly educated nurses of this class far exceeds the supply. Many women who have been thrown accidentally in contact with sickness have felt a call to this line of work, and have been accepted from necessity, even when deficient in knowledge and in experience. Indeed, it is not exceptional to find among them traditions and superstitions which smack of the gipsy, and their crude and mechanical conception of what is meant by scientific nursing renders their ministrations a source of danger. The Guild has engaged in a noble work to overcome this baneful

practice, and the nurses educated here are widely sought. The success attained is due to the two important requirements, that sufficient time shall be given to the period of training to inculcate not only principles but comprehension of principles; and that practical work shall always take precedence of lectures or other form of hearsay instruction.

When the probationer enters the Nightingale Home in St. Thomas' Hospital, London, she is given a time-table which outlines her duties as follows:

You are required to be

SOBER.
HONEST.
TRUTHFUL.
TRUSTWORTHY.
PUNCTUAL.
QUIET AND ORDERLY.
CLEANLY AND NEAT.
PATIENT, CHEERFUL AND KINDLY.

You are expected to become skillful —

1. In the dressing of blisters, burns, sores, wounds, in applying fomentations, poultices and minor dressings; in the administration of subcutaneous injections.
2. In the application of leeches, externally and internally.
3. In the administration of enemas for men and women, and the use of the catheter for women.
4. In the management of trusses, and appliances in uterine complaints.
5. In the best methods of friction to the body and extremities.
6. In the management of helpless patients, *i.e.*, moving, changing, personal cleanliness of, feeding, keeping warm (or cool), preventing and dressing bed sores, managing position of.
7. In bandaging, making bandages, rollers, lining of splints, etc.
8. In making the beds of the patients, and removal of the sheets whilst patient is in bed.
9. You are required to attend at operations.
10. To be competent to cook gruel, arrowroot, egg flip, puddings, drinks, for the sick.
11. To understand ventilation, or keeping the ward fresh by night as well as by day; you are to be careful that great cleanliness

is observed in all the utensils, those used for the secretions as well as those required for cooking.

12. To make strict observation of the sick in the following particulars:

The state of secretions, expectoration, pulse, skin, appetite; intelligence, as delirium or stupor; breathing, sleep, state of wounds, eruptions, formation of matter, effect of diet, or of stimulants, and of medicines. To "take" the temperature, pulse and respiration.

13. And to learn the management of convalescents.

If all the rules of conduct for the nurse, as well as for everybody else, were to be crystalized into one, it would be "see what is to be done, and do it." This definite purpose will effect results, and will appeal to the patient. It is unfortunately necessary to remind nurses that they are not guests in homes where they are employed, and that they should not exact service upon themselves. Silent and unostentatious effort will be rewarded by gratitude, which is not the prize of conversation of doubtful value. It is told of one of the most famous political bosses of the country that when one of his lieutenants appealed to him for assistance out of a difficulty, he telegraphed, "Don't talk." One of Miss Nightingale's patients, speaking of the presence in his sick room of his nurse and his dog, gave preference to the dog; "Above all," he said, "it did not talk!"

The two nurses who are certified by the Guild to-day are to be congratulated upon the completion of their period of training under such good auspices, and are to be particularly commended that they have resisted every temptation to a short road to learning. The value of a thorough foundation may be more apparent in the future than in the present, but when it asserts itself, it will be found a most substantial endowment. I would not extol one occupation above another, for the spirit of the Christian era is altruistic, but there is a peculiar attractiveness in the vocation devoted to the help of others. Pastor Fliedner gave his energy to the afflicted and spent his life in scenes of suffering and distress. Almost his last words before he "passed to his glorious rest," to use Miss Nightingale's phrase, were: "As I look back upon my life, I appreciate how full it has been of blessings; every heart-beat should have been gratitude and every breath praise."

TREATMENT FOLLOWING ABDOMINAL SECTION.

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The title I have chosen to-day, that of treatment following abdominal section, is hardly the right one, as this paper is really a plea for getting patients out of bed earlier than is the usual custom following such section. I thought for some time that I was the first to be extremely radical in this respect, as a routine procedure, but I found there is nothing new under the sun, for in November of last year Dr Herman Boldt of New York wrote me regarding this subject and I found that he had been using this method with some modification for some time, and he told me that Dr. Emil Ries of Chicago had been doing the same thing even earlier. Dr Ries was in fact the pioneer in this method, it seems.

The incident which led to my thinking of this procedure was as follows: I had been operating in the country under the most unfavorable conditions upon a man who was suffering from an acute attack of appendicitis. I went to see him the next day, and approaching the front door, noticed a man standing at the window shaving himself. I entered the house and perceived that the bed where the patient had been, was empty. I was surprised, and spoke to the man at the window, asking him where the patient was. As his face was covered with lather I did not recognize him, and was considerably surprised when he informed me that *he* was the patient. I immediately ordered him to bed. He refused flatly, saying that I had operated against his will and since he was lucky enough to survive he proposed to *stay* alive, and "he'd be damned if he'd go to bed." He had his own way, going about with his clothes on as if nothing had happened, and rather to my astonishment made as fine a recovery with a primary union as I have ever seen.

This case set me thinking, for I well remember that twelve years ago while I was house-surgeon at St. Vincent's Hospital,

New York City, the usual time following laparotomy by such authorities as W. T. Lusk, Joseph D. Bryant, Clement Cleveland, and others, was four weeks. I retained my connection at the Hospital for five years, and during that time I saw the period dwindle to *two* weeks. Then Robert T. Morris made a routine practice of ten days, and others later on, even a shorter time.

Therefore, with *not much* fear and trembling, about twenty months ago I started on a few well-selected cases, having my patients propped up on the second day, and sitting on a chair on the fifth day.

I have now carried it to the following procedure: I have all patients, no matter what the lesion, or how weak, recover from ether in the sitting posture by means of a bed-rest. The result of this is that they have very little nausea. I think that this is due to a cerebral anaemia with consequent less irritation to the vomiting center. Of course I am not sure of this, but the fact remains that there is practically no vomiting. I keep them in this posture for about twelve hours, then allow them to lie down and turn in any position that is comfortable, as, on the side with knees drawn up. After they have rested, they are encouraged to sit up again with bed-rest, practically all of the next twenty-four hours. On the third day, if they are quite strong, I have them in a chair, but by the fourth day anyway. Some walk around on the fourth day, and *all* do so on the fifth day. From then on they walk about, or sit up with their clothes on during the day, until they leave the hospital, usually from the tenth to the fourteenth day, and they go out well and strong, not having been weakened by staying in bed.

My experience in this method covers about two hundred laparotomies; Dr. Boldt's, I believe, between four and five hundred; and Dr. Ries', over five hundred. There are other men now following this method, among them Dr. Brothers and Dr. Bodine of New York. Therefore considerably over one thousand abdominal sections have been kept under observation and the results have been extraordinarily gratifying. Dr. Ries uses only a loose binder, closing the abdomen by layer suture. Dr. Boldt uses a scultetis bandage of zinc oxide plaster extending well above the navel and low down over the hips. I used a single broad bandage of zinc oxide plaster extending from just above the pubis to the umbilicus. In applying the binder, the patient is lifted from the operating table to a stretcher across which

has been laid a strip of adhesive plaster varying in length from three to four feet, and from five to seven inches wide according to the size of the patient. One side is brought over as firmly as possible across the sterile gauze laid on the wound and encircling the patient's abdomen. The other end is placed firmly over this, making a practical vise around the abdomen and below the umbilicus. I think this method superior to Boldt's because the epigastrium is free for respiration and the patient is not bothered so much with gaseous distension; I should be afraid to leave the abdomen unsupported as Dr. Ries does. I sew the abdomen up by layer suture, using plain catgut for peritoneum, chromic gut for fascia, and plain gut again for sub-cutaneous suture. In sewing the fascia, if a large tumor has been removed, I always overlap the fascia by a continuous mattress suture as recommended by the Mayos. If operation has made no difference in the circumference of the abdomen, I do *not* believe in over-lapping the fascia, as it shortens the circumference about one-half inch and naturally increases the inter-abdominal tension. This of course would predispose to hernia.

Regarding the internal treatment of patients, they receive sips of water or bits of ice after the first twelve hours. If there is very little gas, or no stomach or intestinal symptoms, they are allowed sterile water, orange juice, weak coffee or tea, *but no milk*, on the second day.

The bowels are moved on the third day by divided doses of calomel followed by a saline. If this is not sufficient, I give a high enema of milk and molasses, one pint of each and warm. This may need repetition, and I wish to state right here that this enema is the best in its action that I have ever seen and can be used under any conditions where an enema is indicated. I never give any stimulation, no matter how weak the patient is, but I am a firm believer in making patients comfortable with hypos of morphine in small amounts as they require it, during the first two days. Some surgeons do not believe in this, stating that the immediate effects are good, but the after-effects counteract the benefit. These men have probably never been operated upon themselves, as I have found on inquiry that every man who has himself suffered abdominal section is a firm believer in the use of a little morphine.

If the condition is grave, I depend upon salines by rectum, and hypodermoclysis, and washing out the stomach. In doing

this, the throat should be cocainized with a four per cent. solution. Five minutes should be allowed to lapse before the tube is inserted. It is wonderful to see how a patient apparently going to the bad with all the signs of sepsis, will clear up after one or two levages, as many of these cases are simply undergoing an auto-intoxication from the gastro-intestinal tract. After the bowels have been moved on the third day, the patient is fed on light diet and by the fifth day is on full diet.

So much for clean cases. Where there is an acute general peritonitis, the treatment is modified in that a large rubber tube one-half inch in diameter is placed deeply into the pelvis through a median incision. Holes in this tube should be so small that the intestines cannot be caught. A wick of gauze is placed through this tube extending from the bottom of the cavity to the gauze on the outside of the abdomen. Other puncture wounds in the abdomen may be necessary with small rubber tubes inserted. The patient should be placed in a perfectly upright position in the bed, not elevating merely the head and shoulders but the pelvis itself. Pillows in the small of the back against a bed-rest or chair in the bed will insure the elevation of the pelvis at least seventy-five degrees.

Drainage in the abdomen will take place by gravitation only during the first twelve or twenty-four hours, never longer, therefore the importance of this posture at the very beginning cannot be over-estimated. Securing the most upright position possible therefore, the infectious material will most readily gravitate and be low down in the pelvis where it can be reached later through rectum or vagina. I have done this last several times with fine results.

After the patient is properly placed in bed, give continuous normal salt solution by rectum according to Murphy. To do this, cut the end off of a rubber catheter and insert it about three inches into the rectum. This catheter should be attached to a fountain syringe of which the bag is hung but two inches higher than the rectum. This will not move the bowels if given gently, neither will the patient be aware of the procedure but several pints of the solution will be taken up in eighteen hours, which will serve to relieve thirst, and fill the abdominal lymphatics.

If everything is favorable, the pulse will drop to one hundred or under. The temperature is of no importance whatever till

after the third or fourth day, but if after that time it shows signs that suppuration is taking place, the pus can be reached by rectum or vagina, as it has naturally gravitated to the pelvis and been walled off there from the general peritoneal cavity in the form of a pelvic abscess.

On the fourth day I use the milk and molasses enema which I have already spoken of, thus inducing an easy evacuation of the bowels. This can be repeated if necessary.

The advantages claimed for this early sitting up of patients are that it is a proved prophylactic measure against post-operative phlebitis, as has been clearly set forth by Dr. A. Brothers in his article of May, 1907, in the *American Journal of Obstetrics*; that the patient is not weakened by enforced rest, which in an acute surgical condition is very depleting; that enough cases have been traced to show that the recoveries are better; that hernias are, if anything, *less* frequent; that it practically stops post-operative vomiting; and robs surgery of its terrors by evading the long convalescence.

QUESTIONS OF BROAD CONSIDERATION OUTSIDE OF TECHNIQUE THAT CONCERN THE ORGAN- IZED MEDICAL PROFESSION.

Anniversary Address before the Medical Society of the State of New York

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An annual meeting of a large and important Medical Society will always be an event of significance. This may not at the time be apparent but beyond a question each adds its quota and knits its part into the pattern that comes to be formed. It should not be otherwise, because it must be a summation of much work done during a year and to some extent a mirror of the year's attainments. It will also reflect the constantly forming modifications of thought and the estimates of values in the varied phases of professional life.

The wise years,—Lowell calls them. How they settle questions and determine policies; how along with their freightage of new matter with which every day almost is pregnant, they mould our minds and shape our convictions. Constantly we are compelled to readjust ourselves to the logic of unconsciously assimilated change, to the mental metabolism that is always operating. Each year, with added knowledge, we find also ourselves with faces a little differently turned, our estimates differently measured, toward methods of work, questions of ethics, questions of policy, and questions of responsibility. This is the product of growth, and growth is the only qualified voucher of life; and it is by the opinions of others printed in books and journals, but more by the attrition and interchange of personal contact and association, largely afforded by these Society gatherings, that this is effected.

Every page in history teaches the value of organization. To be sure great work is done in seclusion, by the initiated and trained, working alone in the laboratory and in the College Close, unjostled by the crowd; but it is valueless until it is turned into the current of common life and is passed along and becomes thereby a stream of influence helpful to humanity. This is what gives significance to events such as we set in motion to-day.

This Society, for a brief period flowing in two nearly parallel

streams now happily reunited, had one very definite purpose for its organization and which made its first meeting a century ago significant,—to associate all the reputable physicians of the commonwealth and ostracise the unworthy. The motive was certainly not a selfish one on the part of the men who organized the Society. A profession which has always held that there shall be a community of possession in the knowledge and the invention of the individual, has little use for trades unionism. It was an altruistic spirit that prompted John Stearns and William McClelland and Nicholas Romeyne and their associates to fight through the Legislature in 1806 the bill which established our system of County and State organization. "The history of all the learned professions," they prefatorially declared, "imperiously proves this fact, that no one of those professions has ever become respectable or *extensively useful to mankind*, that was not under the restraint of the great body of its own members." And they enumerate as an outcome, the promotion of medical education, the encouragement to physical inquiries and observation, and the diminished influence of pretenders to the healing art. Self-respect, mutual improvement, and obligation to mankind were their actuating motives. They may well be the tripod of our creed to-day.

What would be the condition of our profession but for the work of this Society. The history of what it has striven for all along is full of the record of things accomplished for professional betterment. This very year, by its almost unaided effort, there has been placed on the Statute Book a Medical Practice Law, which is the culmination of what it has striven after for more than twenty-five years. Practically all movements for reform of this sort have been carried out by this organized association; sometimes only after long years of effort, for we seldom find the millennium around the next turn in the road.

The Democracy of this organization is its chief asset. There is a great multitude of associations among medical men, formed for various purposes, and variously exclusive. As an earnest advocate of the County medical society, the local body which is the foundation of our system, I have always wished that it might be the center of all local professional life, and that associations for special work be made branches of and from it. As for associations with exclusiveness based on any assumed superiority, collegiate or otherwise, I see no place: "Murray Hill and Bel-

gravia may be necessary to our civilization " writes Hopkinson Smith, " but neither of them interests the man who has any purpose in life." Our organization is wide open to every worthy medical man. And on this I would put no limit. Scientific men generally dislike to be classed with schools of thought and their implied limitations, but there are worthy men whose work and purposes we respect, who by circumstance or from conviction are not beyond this, and I see no reason for regarding this as a ground for exclusion from our membership. I would bring every reputable practitioner in, simply drawing a line of exclusion against those who are for a very definite reason unworthy, and so fulfill the purposes of the fathers. In the midst of the gigantic energies of the Twentieth Century no institution is going to find adequate expression and accomplish large purposes that is not in the widest sense democratic, and animated by the soul of humanity. Our organization should take in all, give all a chance for expression, make its floor an open forum and its executive body as free as a New England town meeting; such an association of united men in County and State will always win good men to its membership and have its way, so long as its purposes are high.

My purpose in the word I would bring to you is chiefly to indicate how admirably this Society is fitted for work by its ideal organization and composition, and that by reason of this and because of its ability there devolves upon it the obligation of service.

Obligation is the inevitable offspring of capacity. There are questions of large consideration outside of technique which ought to concern the organized medical profession, questions of the highest concern to mankind, which none is so well fitted as the medical body to solve, and whose execution none can so well accomplish. Its obligation to serve the community is for that reason imperative.

The matter of Public Health, much consideration of which gathers about this meeting, stands first. The public has always been and always must be dependent on us for practically all it gets in this direction. I think the medical profession, concerned naturally first for the individual, is rather inclined to forget its obligation to the public. The public are indifferent to sanitation; indeed it seems to come into the category of moral issues generally, which need a prophet and a preacher to lead the way.

The people are more apt to obstruct work for their salvation than to help it, and it is very seldom that a community has any conception of the value of sanitary protection. The same failure to estimate the prime importance of safeguarding health is found with legislators and public custodians of affairs of State. The Health Department is pushed aside for others that protect wealth or bring money into the treasury, or even concern the well-being of domestic animals, unmindful that Sanitation, not counting the human distress relieved by it, is the greatest conservator of material values in the world to-day. For instance, unless Koch or some one else finds a remedy for the Sleeping Sickness wide areas of value in Africa will become a desert. From the time that Hippocrates was summoned to Abydos and redeemed the place from the annual ravages of malarial fever by draining the marshes, down to the Japanese war, history bears witness to the material worth of Sanitation.

No subject comes nearer to me personally, for I have been in some capacity attached to the work of the State Department of Health almost from its beginning. In that period how much has been accomplished can be realized by the contrast between knowledge and attainment twenty-five years ago and now. The chance for life of children under five years has been nearly doubled; Diphtheria has been reduced one-half in its mortality; Diarrhoeal and Summer mortality one-third; the whole subject of micro-organisms and the antitoxins down to Flexner's contribution for cerebro-spinal meningitis has been written; Consumption infectiousness recognized; the relation of water and milk to disease discovered through laboratory research and experience in executive work. All this has been the work largely, both in discovery and execution, of our profession. And it has been a labor of love, for no department is generally so grudgingly compensated for its work as the health department and officer. While this is true, I think that the average practitioner not connected directly with the work is apt to fail often in giving the support to the work in his community that he should; his help is invaluable. What this body of physicians can do, aside from what many of its number are doing so well in research and executive work, is likewise very considerable. It can direct popular thought aright, create the public sentiment necessary to make any law effective, co-operate with the sanitary officers, help to remedy the law wherein it has grown archaic, help in

effecting extension of the Department work in such directions as seem desirable, such as the establishment of County Health Officers Associations and County Laboratories, make meetings of County and State Societies effective in informing the profession, work for more teaching of sanitation in the medical schools so that physicians may be made better sanitarians. For this will always be true, that the work of carrying forward this great enterprise, in all its various ways, must be with the medical men.

Another subject that appears to me to be peculiarly one for the medical profession as an organized body to solve is the Alcohol question. The misuse of alcohol is one of the most tremendous evils that touch the bodies and souls of mankind. Hospitals, Asylums, Epileptic colonies; as well as almshouses, reformatories, and prisons tell of its destructiveness. Its therapeutic use is being scrutinized with care by practitioners and hospitals, and the profession is concerned in this regard; but something larger than this is to be asked of it. When many States are peremptorily excluding it, prominent magazines which are makers of thought are espousing the cause against it, and there seems to be a fresh crusade in progress, this Society ought to find some definite way to leadership in the work of control. Largely a moral malady, yet who knows its nature, etiology, and prevention better, or comes nearer to its unfortunate victims, than these guardians of the mind and body of the race; who will be more sane in the midst of much hysteria.

Of other questions not a few, which will occur to us all as those upon which this body should exert its influence because it is qualified, I offer only the suggestion of mention.

The educational life period of growing children is one of these. We are as individuals meeting all the time illustrations of the need of intelligent control of it.

Ophthalmia Neonatorum has been brought to our notice as a matter of personal responsibility in the technique of its care; but so long as statistics show that it still continues with no abatement to be a leading cause of unnecessary blindness it brings an obligation on the Society to speak to us at least as individuals, that this dire evil may be lessened.

The evils of the present system of Medico-Legal Expert Testimony, so fully and ably presented in his President's Address by Dr. Bristow in 1903, is another subject on which this body

should join hands with the State Bar Association to see if a remedy cannot be found.

Gentlemen, these are only suggestions of what might be enumerated and detailed, to show how this Society may find its place, and how well it is fitted to be effective. And because it is fitted to be effective I believe you will agree with me that the obligation upon it will lie; for as with individuals so with institutions life depends on faithfulness to personal duty in the place where one is put.

At a fortieth anniversary of College graduation recently in which I was concerned, one of high place in the scientific world made the startling statement that since that time the sum total of human knowledge had been more than doubled. Could it be that within that moderate time the world had learned more than it had learned in all the centuries that went before? If so, in what proportion has knowledge increased in matters that lie under your direct handling? What students must we be to keep pace; each year must bring its large contribution. For some of it this meeting is a clearing house.

But let us as a body of a learned profession never be unmindful of the fine old French motto, "*Rank imposes obligation.*"

Editorial

MY DEAR HERBERT.—I am very sorry to hear you have been suffering from depression; it is one of the worst evils of life, and none the better for being so intangible. I was reading a story the other day, in some old book, of a moody man who was walking with a friend, and, after a long silence, suddenly cried out, as if in pain: "What ails you?" said his friend. "My mind hurts me," said the other. That is the best way to look at it, I think—as a kind of neuralgia of the soul, to be treated like other neuralgias. A friend of mine who was a great sufferer from such depression went to an old doctor, who heard his story with a smile, and then said: "Now you're not as bad as you feel, or even as you think. My prescription is a simple one. Don't eat pastry; and for a fortnight don't do anything you don't like." ARTHUR CHRISTOPHER BENSON.

The Upton Letters.

The
Psychoses
of the
Climacteric.

It is well known that the active changes taking place in the organism at puberty predispose to mental disorders, and that this is a period most active in their production. Brief changes in vital activity have also been known to accompany the menstrual epoch, which may be associated with mental symptoms, described by Krafft-Ebing and others as menstruation psychoses. Some writers have also directed attention to the suppression of this function during mental diseases. Pregnancy and the puerperium are frequently attended by mental attacks, so that susceptibility when the menstrual function ceases is not to be regarded as extraordinary.

Many writers have investigated the menopause in this relation, and the statistical results of mental complications reveal generally an unfavorable outcome. The form of disorder in the majority of cases is melancholia, though frequently paranoia or paranoia-like symptoms are prominent. Gläveke finds that the artificial menopause due to operative measures is likewise associated with mental states. After the removal of both ovaries mental disturbance was noted in sixty-six per cent, and half of these cases were melancholic in type. After the removal of the uterus fifty-four per cent were affected mentally and the majority of these were also melancholic. Berger (in the *Binswanger Festschrift*) records the results of investigations in the material of the clinic at Jena. There were one hundred and forty women of a total of three hundred and twenty-six, admitted between the ages of forty and fifty-five, who were in the climacteric. Laying aside manifest organic diseases, as general paresis and hemorrhage, and those who had had previous attacks of insanity, there remained fourteen women whose mental state was coincident with the menopause. One of these had had a total extirpation; of the thirteen remaining, ten patients manifested melancholia. Five of these presented an hereditary taint. One of these patients committed suicide; one improved, and three recovered. Of the nine cases seven recovered, giving an unfavorable outcome in over twenty per cent. Three patients among those recovered presented cardiac lesions. It thus appears that of fourteen climacteric cases, one being artificial, ten presented symptoms of melancholia, of whom one gave symptoms resembling those of paranoia. In three there was acute hallucinatory paranoia with katatonia; of the melancholias, fifty per cent were hered-

itarily tainted, and in one the predisposition could not be ascertained. Two terminated by suicide, four passed into a state of chronic defect, and eight recovered.

Berger's contribution is short, but suggestive in that it summarizes concisely the nervous relations of menstrual disturbances.

Little Biographies and the Eponymic Diseases

XXV. THOMAS SYDENHAM

“**T**HIS is a kind of convulsion, which attacks boys and girls from the tenth year to the time of puberty. It first shows itself by limping or unsteadiness in one of the legs, which the patient drags. The hand cannot be steady for a moment. It passes from one position to another by a convulsive movement, however much the patient may strive to the contrary. Before he can raise a cup to his lips, he makes as many gesticulations as a mountebank; since he does not move it in a straight line, but has his hand drawn aside by spasms, until by some good fortune he brings it at last to his mouth. He then gulps it off at once, so suddenly and so greedily as to look as if he were trying to amuse the lookers on.”

The labelling of chorea minor as Sydenham's Chorea was probably the work of some continental physician, for inasmuch as the major chorea, the “Dancing Mania” of the middle ages, is not known to have occurred in England, the value of Sydenham's clear, but rather brief, description of the minor disease was apparent only to the profession on the continent of Europe, who undoubtedly had confused the two affections. As will be seen on reading the description in Sydenham's own words, it is rather a sketchy characterization, and though it describes the main features with considerable fidelity, it seems hardly to merit the extreme praise of some writers who call it “a masterpiece of description.” Luckily the reputation of Sydenham does not rest upon the more or less chance association of his name with this disease.

Thomas Sydenham was born in the village of Wynford Eagle in Dorsetshire, England, some time in the year 1624. The exact date of his birth is not known, but the record of his baptism on

September 10th of that year makes it pretty sure that it was the year of his birth. He came of an old and honorable family which gave to his country not only himself, probably its greatest gift so far as mankind is concerned, but also a considerable number of soldiers, jurists, scholars, churchmen, and statesmen.

Of Sydenham's early education nothing definite is known, and it is merely surmised that he may have attended one of the two well-known schools in the neighborhood, or may have been educated at home by a tutor. His university education began about his eighteenth year, at Oxford, but was interrupted after two or three months by the civil war, in which it seems quite certain that he took an active part on the Roundhead side, and was indeed once severely wounded and left for dead on the field. His education was resumed, again at Oxford, in his twenty-second year, and it is at this time that he probably began the study of medicine. He received a degree of Bachelor of Medicine in 1648, but this was not a degree in regular course, but a so-called "degree by actual creation," and was obtained by what would nowadays be termed political pull. After obtaining the degree Sydenham remained some time, perhaps several years, at the university. No doubt this early acquisition of a degree was of advantage to him in that it enabled him to carry on his studies unrestrictedly. There is still doubt whether he carried on further medical studies under university auspices, though there is a good deal of indirect evidence that he was a student at Montpellier, and was much influenced by the teachings of the celebrated physician Barbeirac. His degree of Doctor of Medicine was obtained in 1677, years after his Bachelor's degree, at Cambridge.

Sydenham's fame as a medical man rests first of all upon his influence in reforming the methods of medicine. His contemporaries were most of them wrapped up in theories, often of the most chimerical and (to us) absurd nature, and based almost purely on speculation. They sought to make the facts fit their theories, a method of undoubted merit and still used to advantage, but a method which may only be used safely as an adjunct to the inductive method now underlying scientific research. Sydenham drew the profession back to the method of induction based on the actual observation of disease, and for this reason must be regarded as one of the founders of modern medicine. His methods of treatment, so far as drugs are concerned, seem

almost as ridiculous in many ways as those of his contemporaries, but his methods of management, as distinguished from actual medication, were based on sound common sense, and were often surprisingly modern. His clinical writings are based entirely upon observations actually made at first hand. They show great powers of observation and analysis. He first distinguished Measles from Small-pox, and left the whole subject of the exanthemata much clearer than he found it. His minor writings, and especially his observations on hysteria, are many of them models of conciseness and accurate observation.

Sydenham's personality is to some extent disclosed by his writings, especially by some of his personal correspondence in which he casts aside the restraint which he manifests in his published works. From his associates, as well as his works, we learn that his was a candid, direct, and forceful personality, with a smack of the camp and the outdoor life, rather than the polish of the society physician. It is very evident that he won the confidence of his patients, and aroused the opposition of most of his competitors. He was without doubt a great despiser of shams, and did not hesitate to attack them with bare knuckles. His contempt for the medical methods of his confreres was probably not a silent one, and one has no difficulty in imagining how he acquired the enmity of the heads of the profession, an enmity which he mentions in his works and apparently thinks unwarranted and malicious. No doubt the enmity was increased by the fact that some of his closest friends were not physicians but scientists, like Robert Boyle, who were interested in medicine, and were probably considered by the mass of the profession as impudent interlopers. That Sydenham had friends and admirers in the profession as well as enemies was but to be expected. Dr. Andrew Brown, the Laird of Dolphinton, a well-known Scotch physician, travelled to London especially to see him, and returned a very enthusiastic supporter. We find Sydenham writing letters of advice to several physicians, and some of his lesser writings are in this form. Brown names among those who publicly gave their adherence to Sydenham's teachings Dr. Ettmüller of Leipsic, Dr. Doleus, physician to the Landgrave of Hesse, and Dr. Spon of Lyons; so it is evident that the physicians of the continent, as well as those in England, were acquainted during his life with his works.

Of Sydenham's more intimate life we know little. He was a

victim of the gout from a relatively early age, and later in life suffered from urinary calculi. He was married and had children. We get some idea of his habits from his writings, and gather that for his day he was a temperate man, who probably enjoyed his small beer and an occasional pipe. He at times took physicians into his house as pupils, and both Dover, of Dover's powder, and Hans Sloane, the medical botanist, lived with him at one time. Sydenham died in 1689; he had been in poor health for some time before this as a result of his gout and renal trouble.

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GEORGE BLUMER.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR NOVEMBER, 1907.

Deaths.

	1902	1903	1904	1905	1906	1907
Consumption	20	18	18	24	13	24
Typhoid fever	6	1	1	5	2	0
Scarlet fever	0	1	0	0	0	1
Measles	0	0	0	0	0	0
Whooping-cough	1	0	0	0	0	0
Diphtheria and croup	2	3	2	0	3	6
Grippe	0	3	0	0	0	0
Diarrheal diseases	0	4	3	4	0	3
Pneumonia	19	11	10	10	6	8
Broncho-pneumonia	6	2	0	10	2	2
Bright's disease	18	23	19	7	7	16
Apoplexy	6	9	12	5	10	8
Cancer	12	14	13	4	3	13
Accidents and violence ..	8	9	9	16	5	6
Deaths over seventy years	32	32	27	29	15	43
Deaths under one year...	14	15	8	21	18	10
<hr/>						
Total deaths	156	145	131	151	123	154
Death rate	18.96	17.63	15.93	18.36	14.95	18.72
Death rate less non-						
residents	17.52	16.66	14.59	15.92	14.10	16.17

Deaths in Institutions.

	1902		1903		1904		1905		1906		1907	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital	5	9	8	3	10	7	5	7	9	2	14	9
Albany County Jail	0	0	0	0	0	0	2	0	0	0	0	0
Albany Orphan Asylum.	0	0	0	1	0	0	1	3	1	0	0	0
County House	6	0	2	1	5	0	2	0	7	2	1	2
Homeopathic Hospital .	0	0	3	1	2	1	1	1	3	0	2	1
Hospital for Incurables.	0	0	0	1	0	0	1	0	0	0	0	0
House of Good Shep- herd	0	0	0	1	0	0	0	0	0	0	0	0
Little Sisters of the Poor.	1	0	0	0	0	0	3	1	1	0	0	1
Public places	0	0	2	0	3	1	1	2	1	0	2	4
St. Margaret's House ..	1	1	0	0	0	0	2	1	0	0	1	0
St. Peter's Hospital ...	1	2	4	0	2	5	4	2	5	2	7	5
Home for Aged Men ..	0	0	0	0	1	0	0	0	0	0	0	0
Child's Hospital	0	0	0	0	0	0	1	1	0	1	0	0
Sacred Heart Convent .	0	0	0	0	0	0	0	0	0	0	1	0

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were one hundred and seventy-three inspections made, of which ninety-nine were old buildings and seventy-four new buildings. There were sixty-eight iron drains laid, thirty-one connections to street sewers, thirty-five tile drains, one cellar drain, one urinal, thirty-six cesspools, thirty-three wash basins, forty-three sinks, twenty-eight bath tubs, twenty-three wash trays, four trap hoppers in yard, ninety tank closets, one slop hopper. There were one hundred and fifteen permits issued, of which ninety-seven were for plumbing and eighteen for building purposes. There were twenty-two plans submitted, of which four were of old buildings and eighteen of new buildings. There were eight houses tested on complaint, six with blue, red and two with peppermint, and there were nineteen water tests made. Thirty-six houses were examined on complaint and fifty-five were re-examined. Sixteen complaints were found to be valid and twenty without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1902	1903	1904	1905	1906	1907
Typhoid fever	4	5	4	7	11	5
Scarlet fever	5	7	17	21	6	18
Diphtheria and croup.....	48	31	12	16	50	26
Chickenpox	12	3	16	7	2	5
Measles	1	2	1	2	0	29
Consumption	0	0	3	2	1	37
Whooping-cough	2	1	0	0	0	7
Totals	72	49	53	55	70	127

Contagious Diseases in Relation to Public Schools.

	<i>Reported</i>		<i>Deaths</i>	
	D.	S. F.	D.	S. F.
Public School No. 3.....	1	0	0	0
Public School No. 8.....	2	0	0	0
Public School No. 10.....	1	0	0	0
Public School No. 11.....	1	0	0	0
Public School No. 9.....	0	2	0	0
Public School No. 14.....	2	4	0	0
Public School No. 15.....	2	3	0	1
Public School No. 17.....	0	3	0	0
Public School No. 21.....	0	2	0	0
High School	0	1	0	0
Lady Help of Christians.....	2	0	0	0
St. John's School.....	2	0	0	0
Cathedral School	1	0	0	0

Number of days quarantine for diphtheria:

Longest..... 88 Shortest..... 9 Average..... 21 9-25

Number of days quarantine for scarlet fever:

Longest..... 28 Shortest..... 17 Average..... 24

Fumigations:

Rooms..... 133 Houses..... 43

Cases of diphtheria reported..... 26

Cases of diphtheria in which antitoxin was used..... 26

Cases in which antitoxin was not used..... 0

Deaths after use of antitoxin..... 4

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1902	1903	1904	1905	1906	1907
Initial positive	32	22	11	12	30	15
Initial negative	50	54	35	29	40	39
Release positive	49	14	2	13	40	33
Release negative	43	19	14	16	45	109
Failed	8	2	0	0	11	9
	182	111	62	70	166	205

Test of sputum for tuberculosis:

Initial positive	8
Initial negative	5

BUREAU OF MILK.

Wagons and milk in clean condition.....	12
Wagons and milk in unclean condition.....	0
Ice on cans	0
Butter fats below 3%.....	0
Butter fats from 3 to 3.5%.....	4
Butter fats from 3.5 to 4%.....	6
Butter fats over 4%.....	2
Solids below 12%	3
Solids from 12 to 12.5%.....	3
Solids from 12.5 to 13%.....	2
Solids over 13%	4
Meat condemned	0

BUREAU OF MILK.

No.	Specific Gravity	BUTTER FATS.			SOLIDS.				
		Under 3%	3 to 3.5%	3.5 to 4%	Over 4%	Under 12%	12 to 12.5%	12.5 to 13%	Over 13%
5.....	32	..	..	I	..	..	..	..	I
7.....	31.6	..	I	..	..	I	..	..	..
8.....	33.7	..	..	I	..	..	..	I	..
22.....	32.1	..	..	I	..	..	..	I	..
23.....	33.7	..	I	..	..	..	I	..	..
32.....	31.6	..	..	I	..	..	I	..	..
36.....	31	..	..	I	..	..	..	I	..
40.....	31.6	..	I	..	..	I	..	..	..
41.....	33.1	..	..	..	I	..	..	..	I
78.....	32.6	..	..	..	I	..	..	..	I
171.....	32.6	..	..	I	..	..	..	..	I
195.....	32.1	..	I	..	..	I	..	..	..

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	20
Factory certificates issued to children.....	4
Children's birth records on file.....	24
Number of written complaints of nuisances.....	32
Privy vaults	5
Plumbing	6
Other miscellaneous complaints.....	21
Total number of dead animals removed.....	432
Cases assigned to health physicians.....	58
Calls made	211

ABSTRACT OF VITAL STATISTICS FOR DECEMBER, 1907.

Deaths.

	1902	1903	1904	1905	1906	1907
Consumption	14	11	22	23	17	20
Typhoid fever	0	3	1	1	2	2
Scarlet fever	0	0	3	1	0	1
Measles	0	0	0	0	0	0
Whooping-cough	2	0	0	1	0	0
Diphtheria and croup....	4	3	2	1	9	2
Grippe	1	1	1	0	2	5
Diarrheal diseases	1	1	1	1	2	5
Pneumonia	14	13	15	13	18	13
Broncho-pneumonia	5	3	7	5	6	3
Bright's disease	14	17	17	21	14	17
Apoplexy	9	9	11	9	4	9
Cancer	9	11	11	4	9	10
Accidents and violence...	9	3	5	4	11	4
Deaths over 70 yrs.....	29	33	21	20	13	37
Deaths under 1 yr.....	18	10	13	9	11	16
<hr/>						
Total deaths	139	142	151	132	157	161
Death rate	16.36	16.80	17.77	15.53	18.47	18.94
Death rate less non-residents	15.53	15.41	16.95	14.35	16.83	16.71

Deaths in Institutions.

	1901		1902		1903		1904		1905		1906		1907	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital	9	1	7	5	10	5	6	3	8	3	8	5	7	9
Albany County Jail...	0	0	0	0	0	0	0	0	1	0	2	0	0	0
Albany Orphan Asy'm.	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Child's Hospital	0	0	1	0	1	0	0	0	0	0	1	0	0	0
County House	0	1	1	2	3	0	3	1	5	0	1	0	3	1
Home for Aged Men.	0	0	1	0	1	0	0	0	0	0	1	0	0	0
Home for Friendless..	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Homeopathic Hospital.	1	0	3	0	1	3	1	1	0	1	4	2	5	1
Hospital for Incur'bles	0	0	0	0	0	0	0	0	0	0	1	0	0	0
House of Shelter	1	0	1	0	0	0	0	0	1	0	0	0	0	0
Little Sisters of Poor.	0	0	1	0	0	0	1	0	2	0	0	0	0	0
Public places	0	1	0	0	4	1	0	1	0	0	0	0	0	1
St. Margaret's Home.	0	0	0	0	0	0	2	0	1	1	0	0	1	1
St. Peter's Hospital..	2	2	2	0	0	2	3	1	3	4	6	3	5	4
Births at term														86
Marriages														98
Still births														11

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation there were one hundred and seventy inspections made, of which one hundred and eleven were old buildings and fifty-nine new buildings. There were forty-four iron drains laid, nineteen connections to street sewers, twenty-two tile drains, one urinal, thirty cesspools, forty-six wash basins, fifty-nine sinks, forty-eight bath tubs, forty-two wash trays, eleven trap hoppers in yard and ninety-two tank closets. There were seventy-five permits issued, of which sixty-six were for plumbing and nine for building purposes. There were twelve plans submitted, of which two were of old buildings and ten of new buildings. There were twenty-nine houses tested, one with blue, red, two with peppermint and twenty-six water tests. Forty-four houses were examined on complaint and one hundred and eleven were re-examined. Twenty-six complaints were found to be valid and eighteen without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1902	1903	1904	1905	1906	1907
Typhoid fever	8	6	6	2	3	12
Scarlet fever	9	7	14	14	14	31
Diphtheria and croup....	25	45	12	10	65	15
Chickenpox	22	13	23	3	0	3
Measles	1	29	0	1	2	31
Whooping-cough	3	0	0	0	0	0
Consumption	1	0	0	0	2	28
Totals	69	100	55	30	86	120

Contagious Diseases in Relation to Public Schools.

	<i>Reported</i>		<i>Deaths</i>	
	D.	S. F.	D.	S. F.
Public School No. 1.....	2	2	0	0
Public School No. 4.....	1	2	0	0
Public School No. 5.....	0	1	0	0
Public School No. 6.....	0	1	0	0
Public School No. 7.....	2	0	0	0
Public School No. 8.....	0	1	0	0
Public School No. 10.....	0	3	0	0
Public School No. 13.....	1	0	0	0
Public School No. 15.....	0	1	0	0
Public School No. 17.....	0	1	0	0
High School	0	1	0	0
Normal School	0	1	0	0
St. Patrick's School.....	1	2	0	0
St. John's School.....	2	0	0	0
Lady of Angels School.....	0	2	0	0
Cathedral School	0	2	0	1

Number of days quarantine for diphtheria:

Longest..... 26 Shortest..... 9 Average..... 18¼

Number of days quarantine for scarlet fever:

Longest..... 42 Shortest..... 12 Average..... 25

Fumigations:

Houses..... 124 Rooms..... 125

Cases of diphtheria reported..... 15

Cases of diphtheria in which antitoxin was used..... 15

Cases in which antitoxin was not used..... 0

Deaths after use of antitoxin..... 1

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1902	1903	1904	1905	1906	1907
Initial positive	11	31	12	10	43	15
Initial negative	40	40	24	24	78	70
Release positive	21	35	3	13	92	24
Release negative	1	3	8	11	87	68
Failed	0	0	0	0	11	2
Totals	73	109	47	58	311	179

Test of Sputum for Tuberculosis.

Initial positive	2	4	4
Initial negative	1	2	21

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	27
Factory certificates issued to children.....	3
Children's birth records on file.....	30
Number of written complaints of nuisances.....	36
Privy vaults	3
Plumbing	14
Other miscellaneous complaints.....	19
Total number of dead animals removed.....	262
Cases assigned to health physicians.....	107
Calls made	395

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A regular meeting of the Medical Society of the County of Albany, was held Wednesday evening, November 13, 1907. Meeting called to order by President Lempe, at 8.30 p. m.

The following members were present: Drs. Bailey, Beilby, Blessing, Boyd, Classen, Conway, Cook, Curtis, DeVoe, Douglas, Draper, George, Gutmann, Hacker, Hinman, Jackson, Jenkins, Keens, Keough, Keigher, Krieger, Lawyer, LeBrun, Lempe, Lipes, Lomax, MacFarlane, Mereness, C. H. Moore, Morrow, Moston, Myers, Neuman, O'Leary, G. W. Papen, G. W. Papen, Jr., Pease, Reynolds, Rooney, H. Rulison, Sampson, Skillicorn, Shaw, Traver, Trego, A. Vander Veer, E. A. Vander Veer, J. N. Vander Veer, Van Slyke, Ward, Washburn, Winne.

Dr. SHAW moved that the minutes of the last meeting be accepted as printed in the MEDICAL ANNALS and as corrected by the individual members. Seconded and carried.

Dr. ROONEY, Secretary of the Medical School Inspection Committee, made a strong appeal for help, saying it was necessary, in order to carry on the work properly, to enlist the services of more men. The schedule could then be changed and a man assigned to each school for alternate days in the week, or a school to a man. He then moved that the Committee be continued. Seconded and carried.

The names of Drs. MALCOLM DOUGLAS, WILLIAM A. KRIEGER and EDWIN B. WILSON were then formally proposed for membership.

It was moved and seconded that the Secretary be authorized to cast one ballot for each of the proposed names. Seconded and carried.

The Secretary then cast one ballot for each, and the President declared Drs. DOUGLAS, KRIEGER and WILSON elected as members of the Society.

NATHAN BOWDITCH POTTER, M. D., of New York, then delivered an address on "Opsonins and Opsonic Therapy."

Dr. PEASE thanked Dr. Potter for his most lucid and comprehensive, yet exceedingly concise and clear discussion of such a very complex and difficult subject. The doctor said that he was personally unable to speak from his own experience on the laboratory side or from the clinical aspect of the subject; what he knew of the matter had been derived from conversations with others who had considerable experience in the work. He said that the whole world was indebted to Dr. Wright, even if the results do not conform entirely with what Dr. Wright expected or with what he now claims, for endeavoring to put his clinical observations in such a way as to give them a certain amount of technical or scientific spirit. He also said that Dr. Wright deserved a great deal of credit for what he has done in the line of immunity work.

Dr. POTTER said that he, too, felt that we owe Dr. Wright a great deal of credit for bringing this matter so forcibly to notice. He said that there are but very few discoveries that turn out to be quite as great as originally claimed for them. Dr. Potter spoke of the technique devised by Dr. Wright for explaining this complex subject, saying that it was of inestimable value.

Dr. MACFARLANE said that the able presentation of Dr. Potter seemed to take him to a fairy land in the way of possibilities, as it appeared now as if the physicians were "getting back" at the surgeons and were coming into their own. He added that he felt he could but inadequately express his gratitude for such a pleasant evening; that he never heard a presentation of a scientific subject so well done and so attractively put forth as Dr. Potter's. Dr. MacFarlane then moved that an extraordinary vote of thanks be extended Dr. Potter for the delightful evening.

Dr. VANDER VEER, who seconded the motion, said that Dr. MacFarlane's mind and his own ran in the same channel; that he also felt that the day was about to dawn when surgery will have to "take a back seat."

Motion carried.

Dr. MACFARLANE said that he did not understand why a culture taken from a patient containing a great number of bacteria and injected into the same patient, would benefit him.

Dr. POTTER said that he did not understand either, but gave the current explanation.

In response to Dr. PEASE's question as to whether dead cultures were used Dr. Potter said that the organisms are killed but that it was important "not to kill them too much;" that apparently much better results were obtained when they are just killed enough.

In answer to Dr. J. N. VANDER VEER's question as to whether monovalent or polyvalent sera were used, Dr. Potter said that he used germs, not serum, killed by heat.

Dr. STOVER then spoke of his inspection of Dr. Trudeau's work. Dr. Trudeau, he said, abandoned the use of the opsonic therapy and was getting better results with the tuberculin.

Dr. POTTER said that Dr. Trudeau's results with tuberculin were really confirmatory rather than against the opsonic theory.

Adjourned.

ARTHUR J. BEDELL, *Secretary.*

GEORGE G. LEMPE, *President.*

A regular monthly meeting of the Medical Society of the County of Albany, was held Friday evening, December 13, 1907. Meeting called to order by President Lempe, at 8.45 p. m.

The following members were present: Drs. Ball, Bedell, Blair, Blatner, Conway, Curtis, Douglas, Draper, Gutmann, Hacker, Herrick, Jenkins, Keens, Keigher, Keough, Kreiger, Lanahan, Lawrence, Lawyer, LeBrun, Lempe, Lomax, McHarg, Macdonald, MacFarlane, H. E. Mereness, C. H. Moore, Morrow, Moston, Murray, Myers, Neuman, O'Leary, Papen, Pease, Rooney, Harry Rulison, Sampson, Stevenson, Traver, A. Vander Veer, E. A. Vander Veer, Van Slyke, Ward.

It was moved and seconded that the minutes of the last meeting which the Secretary read, be adopted. Carried.

The Secretary read a communication from the Kentucky State Medical Association, as follows:

"BOWLING GREEN, KY., Nov. 29, 1907.

"*Dear Doctor:*

"Acting under the unanimous instructions of the House of Delegates of this Association, I have the honor of enclosing resolutions in regard to the use of nostrums by physicians and their advertisement to the profession through a large portion of the medical press, and of inviting the active co-operation of your Society in this great work.

"The united efforts of medical organizations have won a complete victory in the insurance fee matter, except as against the New York Life, and this company is sure to come to time if competent physicians refuse to examine for them.

"In this nostrum matter we have a harder fight, because we are fighting ignorance in our own ranks, and will have arrayed against us all those elements in our own and the drug trade which are controlled by the patent and proprietary medicine people.

"Will you kindly inform me what action your Society takes in the matter for publication in our Journal?

"Fraternally,

(Signed) "A. T. McCORMACK,
Secretary."

The following is a copy of the resolutions adopted by the Kentucky State Medical Association:

"THE DOCTOR *vs.* THE NOSTRUM.

"WILL YOU HELP?

"THE YEAR'S FIGHT.

"Having the insurance fight won, excepting only as against the New York Life, which is practically out of business in the State, our best energies, as individuals and as an organization are to be devoted this year, by direction of the House of Delegates, to securing pure drugs and to ridding ourselves of nostrums. The resolutions published herewith are direct and to the point. No doubt is left as their meaning. It is particularly urged that you refuse to receive from the post office, copies of trade journals. Many of the great pharmaceutical houses get out such sheets and send them free to physicians, hoping to lure them into the use of their specialties. Most of these specialties, and all such so-called journals are conceived in fraud and brought forth in iniquity. Refuse to accept them and thus help to kill them.

"Next, look through the pages of every medical journal to which you subscribe, whether it belongs to a State or other organization, or is supported by the members of the National Proprietary Association, the patent medicine vendors' collusive family, or what not, and if you find the nauseating advertisements of the blatant frauds already exposed by the Council on Pharmacy and Chemistry, write a personal letter to the editor, the publisher and each collaborator, calling their attention to such frauds. Do not talk about it! write, and write to-day, and help to save our honorable profession from the vampires who exploit it, to its own shame and dishonor.

"In addition to this we have arranged with the American Medical Association to keep a supply of the Manual of the Pharmacopeia and the National Formulary, on hand in our *Journal* office. Send 50 cents in money or stamps, and by return mail we will send you not only this valuable book, but also the latest revision of the List of New and Non-Official Remedies approved by the Council on Pharmacy and Chemistry of the American Medical Association, and the Propaganda against the use of Nostrums. In one of these two books will be found every medicinal agent necessary to any intelligent doctor. As suggested by one member at this meeting, let each of us get these little books and learn

the honest remedies, that it may not be necessary to rely on the nostrums and our own ignorance.

"Read these resolutions carefully, and, by the same concert of action as won the insurance fight, do your best share toward winning this one. 'United we stand, divided we fall!'

" COMMITTEE ON PHARMACOLOGY.

"Whereas, The American Medical Association has established a Council on Pharmacy and Chemistry, composed of scientists of world-wide reputation and standing, whose function is to examine pharmaceutical products in order to be able to inform the profession as to the actual composition of said products, and,

"Whereas, After careful examination of many hundreds of said products, it has officially announced its approval of a large number of them, and, in order to make clear to the profession the methods and purposes of their work, have published exposures of a large number of the fraudulent preparations that have been foisted on the members of the profession and, through them, on the public, by interested owners and manufacturers, frequently laymen, ignorant of the use of drugs, except their meretricious use, as examples of the much larger number which they have found of little or no value, or positively harmful, and,

"Whereas, We believe that every physician in Kentucky is vitally interested in the work of this Council and desires in every possible way to promote its usefulness and interest, and,

"Whereas, The greatest aid to the nostrum manufacturers in their nefarious and avaricious work has been the medical press, whether controlled by medical organizations, individual members of the profession or interested lay-firms, and,

"Whereas, We believe that the time has arrived when the great profession of medicine, and all agencies controlled by it, should divorce itself permanently, finally and forever from those interests which, like ghouls, prey upon the sick and afflicted through the commercial sale of nostrums and dishonest so-called proprietary, medicines, now, therefore, be it

"Resolved, By the Kentucky State Medical Association, in annual session assembled, that we heartily endorse the formation of the Council on Pharmacy and Chemistry, that we extend it our confidence and congratulations on the splendid work already accomplished, and that we pledge it our unanimous support in its purpose of freeing our profession and its publications from nostrum control, and, be it further,

"Resolved, That in pursuance of this subject, we request each county society in Kentucky to devote a special session to consideration of this important question with a view to securing the active aid of every licensed practitioner in the State, and that the Council of this Association be requested to omit from the advertising columns of our JOURNAL all pharmaceutical preparations which are not manufactured in conformity with the U. S. Pharmacopeia or the National Formulary until they have been approved by the Council on Pharmacy and Chemistry of the American Medical Association; and, be it further

"Resolved, That we request every physician in Kentucky to secure a copy of the abridged U. S. Pharmacopeia and Formulary and be guided by this and the approval of the Council on Pharmacy in their use of medicines; and, be it further

"Resolved, That our Council be directed to communicate with the editors, owners, collaborators and publishers of the medical journals of this country on this subject, and to announce to the profession of Kentucky, through the columns of our JOURNAL, such publications as are willing to assist the profession by freeing their columns of nostrum advertising, and we hereby pledge our support to such journals even if they find it necessary to increase their subscription rate, and, further be it

"Resolved, That we expressly condemn the publication of so-called medical journals by interested manufacturers of nostrums, and request the profession of the State to decline to receive them."

The above is reprinted from the *Kentucky Medical Journal*, November, 1907.

It was moved and seconded that this communication be referred to the Board of Censors. Carried.

H. U. WILLIAMS, M. D., of Buffalo, N. Y., presented a paper on "The Pathology of Acute Pancreatic Disturbances."

WILLIS G. MACDONALD, M. D., followed with a paper entitled "Pancreatic Disturbances from a Surgical Standpoint."

Dr. WARD said that the papers were most interesting and instructive, and moved that a vote of thanks, especially to Dr. Williams for coming so far to address the Society, be extended. He said that the papers must set every man thinking, reflecting on cases he had seen, learning something that will be of use to him in the treatment of cases to come. Dr. Ward recalled a case of a medical student of the fourth year class whose past history did not amount to very much, except on two points—that he had repeated hemorrhages from the nose and that he had been subject to disorders of digestion. He was taken suddenly ill one morning and removed to the hospital, and seen by Dr. Ward a few hours later. That the difficulties of diagnosis in such conditions are not exaggerated was proved in this case. Suggestions had been made of ulcer of the duodenum, perforating ulcer of the stomach, and at the time the patient was seen by Dr. Ward, a mass had developed in the upper quadrant of the abdomen, in the epigastric region, running upward and somewhat to the right. Having seen several cases in which post peritoneal hemorrhage had occurred and had caused very similar symptoms, Dr. Ward first thought he probably had a hemorrhage behind the peritoneum. Continuing Dr. Ward said that while Dr. Macdonald stated that internal medicine was not of much service in pancreatic conditions, in this case it kept the patient out of the hands of the surgeon and exploratory incision. Dr. Ward then spoke of the difficulty of making diagnosis in carcinoma of the pancreas.

Dr. NEUMAN, after commending the two papers most highly, said that some years ago he undertook some work for the purpose of trying to determine the reason why in certain cases when he experimentally in-

jured the pancreas of an animal there was present fat necrosis, and why in other cases it did not show itself. Most of his work was done on dogs. In a way, he found that when the dog had been fed recently and an injury to the pancreas was then produced, necrosis of the tissues ensued. On the other hand, where the animal had been starved for quite a time, no result of this nature took place. Dr. Neuman added that he hoped in the near future to demonstrate this matter more thoroughly.

Dr. VANDER VEER said he wished to render his personal thanks to Dr. Williams for his excellent paper. He then spoke of the difficulty of making correct diagnosis in abdominal conditions, but felt that considering the conditions as presented by Dr. Macdonald, a differential diagnosis with some degree of accuracy is reached. Dr. Vander Veer said that a vast majority of knowledge at the present day has been gained through operation, exploratory and otherwise. He spoke of the rapid strides being made in the study of acute pancreatitis, not by autopsies, but by operations, until now it is possible to make a better diagnosis.

Dr. MACDONALD congratulated Dr. Williams upon the excellence of his paper, in giving as it did, the present status of the pathology of the pancreas, with relation chiefly to the inflammatory conditions which present themselves there. He spoke of the difficulties to be encountered in making diagnosis. He said that the case cited by Dr. Ward recalled the remark of a surgeon, "He is well! He is well! By my grace, I refused to operate upon him!"

Dr. WILLIAMS said that it gave him great pleasure to speak before the Society, and expressed his appreciation for the very kind manner in which his address was received.

Motion to adjourn was then made. Seconded and carried.

ARTHUR J. BEDELL, *Secretary*.

GEORGE G. LEMPE, *President*.

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK—STATISTICS FOR NOVEMBER, 1907. Number of new cases, 157; *Classified as follows*: Dispensary patients receiving home care, 5; district cases reported by health physicians, 9; charity cases reported by other physicians, 103; moderate income patients, 40; old cases still under treatment, 75; total number of patients under nursing care during the month, 232. *Classification of diseases* (new cases): Medical, 53; surgical, 10; obstetrical work of the Guild, 33 mothers and 27 infants under professional care; dental, 9; eye and ear, 2; skin, 20; throat and nose, 3; removed to hospitals, 9; deaths, 8; contagious diseases in the medical list, 10.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 1; attending obstetrician, 1; medical students in attendance, 1; Guild nurses, 4; patients, 2; number of visits by attending obstetrician, 1; by

the medical students, 19; by the Guild nurses, 18; total number of visits for this department, 46.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,307; for professional supervision of convalescents, 195; total number of visits, 1,502. Cases were reported to the Guild by three of the health physicians; by forty other physicians, and by three dentists. Seven graduate nurses and three assistant nurses were on duty.

STATISTICS FOR THE MONTH OF DECEMBER, 1907.—Number of new cases, 183; classified as follows: Dispensary patients receiving home care, 4; district cases reported by health physicians, 15; charity cases reported by other physicians, 105; moderate income patients, 59; old cases still under treatment, 87; total number of patients under nursing care during the month, 270. *Classification of diseases* (new cases): Medical, 72; surgical, 9; gynæcological, 3; obstetrical work of the Guild, 41 mothers and 37 infants under professional care; dental, 8; skin, 13; contagious diseases in the medical list, 11; removed to hospitals, 16; deaths, 10.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 4; medical students in attendance, 5; Guild nurses, 8; patients, 9; number of visits by attending obstetricians, 10; by the medical students, 54; by the Guild nurses, 75; total number of visits for this department, 139. *Visits of Guild nurses* (all departments): Number of visits with nursing treatment, 1,702; for professional supervision of convalescents, 230; total number of visits, 1,932. Cases were reported to the Guild by two of the health physicians by forty-four other physicians, and by four dentists. Eight graduate nurses and four assistant nurses were on duty.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.—The annual meeting of the Medical Society of the county of Rensselaer, was held Wednesday evening, December 11th, 8.15 p. m., at Troy.

The following papers were presented: (1) The Early Diagnosis of Pulmonary Tuberculosis, Dr. Lawrason Brown, Adirondack Cottage Sanitarium, Saranac Lake, N. Y.; (2) The Treatment of Pulmonary Tuberculosis, Dr. Albert H. Garvin, New York State Hospital for Incipient Tuberculosis, Ray Brook, N. Y.; (3) What Municipalities are Doing and What they May Do in the Combat of Pulmonary Tuberculosis, Dr. S. A. Knopf, Associate Director of the Clinic for Pulmonary Diseases of the Health Department of the City of New York. Following the meeting there was a smoker at the Troy Club.

MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY.—The banquet given in celebration of the 101st anniversary of the founding of the Medical Society of the county of Montgomery, was held Wednesday evening, December 11th, at the Central Hotel, Amsterdam, N. Y.

The annual address was read by Horace M. Hicks, M. D., President.

Dr. Charles Stover presided as Toastmaster. The following toasts were responded to: "The Medical Society of the State of New York," Dr. F. C. Curtis, Albany, N. Y.; "The Fourth District Branch of the Medical Society of the State of New York," Dr. D. C. Moriarta, Saratoga Springs, N. Y.; "The Board of Regents of the State of New York," Dr. A. Vander

Veer, Albany, N. Y.; "The Medical Society of the County of Fulton," Dr. C. B. Mosher, Johnstown, N. Y.; "The Albany Medical Society," Dr. Willis G. MacDonald, Albany, N. Y.; "The Medical Society," Dr. Henry Hun, Albany, N. Y.; "The Medical Society of the County of Albany, N. Y.," Dr. G. G. Lempe, Albany, N. Y.; "The Medical Society of the County of Herkimer, N. Y.," Dr. A. Walter Suiter, Herkimer, N. Y.; "The Medical Society of the County of Schenectady, N. Y.," Dr. C. G. McMullin, Schenectady, N. Y.

SCHENECTADY PHYSICIANS' HOSPITAL SOCIETY.—Schenectady Physicians' Hospital Society was incorporated with the Secretary of State, December 6th, to operate a hospital in that city. The capital stock is \$10,000, and the directors include: Dr. George W. Bates, Dr. C. F. Clowe, Dr. J. H. Collins and twenty-four others of Schenectady.

THE WATERVLiet MEDICAL SOCIETY has elected the following officers for the ensuing year: President, Dr. F. P. Van Denbergh; vice-president, Dr. L. B. Rulison; secretary and treasurer, Dr. A. I. Cullen.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations February 15, 1908, for the following positions: Assistant Electrical Engineer, \$600 to \$900 and maintenance; Assistant Steam Engineer, New York County Jail, \$840; Bridge Draughtsman, \$1,200 to \$1,500; Chemist, Department of Agriculture, \$1,200; Elevator Conductor, City Hall, Albany, \$900; Guard, State Agricultural and Industrial School, \$540 and maintenance; Instructor in Masonry and Bricklaying, State Institutions, \$780 to \$900 and maintenance; Keeper, Erie County Penitentiary or Jail, \$780 to \$840; Library Assistant, Public Service Commission, \$900 to \$1,200; Orderly, Erie County Hospital, \$540 and maintenance; Physician, State Hospitals, \$900 and maintenance; Trained Nurse, State Institutions, \$420 to \$600 and maintenance.

The last day for filing applications for these examinations is February 8th. Full information and application forms may be obtained by addressing the Chief Examiner of the Commission at Albany.

CHARLES S. FOWLER,
Chief Examiner.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.—Active preparations for the International Congress on Tuberculosis to be held in Washington, next September, are under way in other countries. The National Committees for France, Germany, Sweden, Austria, Holland, Greece, Bulgaria, Cuba, Venezuela, Brazil and Costa Rica have organized and have forwarded their membership lists to the Secretary-General. The French committee has a membership of over three hundred and includes men of prominence in public life as well as in the medical profession. The officers of this committee are president, Dr. Louis Landouzy of the medical faculty of the University of Paris; vice-presidents, Dr. Faisans of the University of Paris, Prof. Valleé the eminent veterinarian, of Alfort, Dr. F. Bezancon of the University of Paris, and Dr. Le Gendre; secretaries, Dr. Trihoulet, Secretary-General of the last International Congress which was

held in Paris three years ago, Dr. Nobecourt, Dr. Leon Bernard, Dr. Dehan, and Dr. Georges Bourgeois; treasurer, M. Masson.

The Secretary of the German Committee Dr. Johannes Nietner, was Secretary-General of the recent International Congress of Hygiene and Demography. Other members of the Committee are Dr. Gotthold Pannwitz, Secretary-General of the International Tuberculosis Association, Dr. B. Frankel, Dr. Ernst von Leyden, Professor emeritus of the University of Berlin, and Dr. Johannes Orth, Professor of Pathology in the University of Berlin.

Dr. N. P. Tenderloo, of Leyden, another well known pathologist is a member of the Committee for Holland. Dr. P. K. Pell, of the University of Amsterdam, is chairman of that committee, and Dr. W. J. von Gorcum of The Hague is the secretary.

Dr. A. Herrera Vegas, the Chairman of the Venezuelan committee is president of the Venezuelan Anti-tuberculosis League, and a member of the National Academy of Medicine at Catacas. Dr. P. Acosta Ortiz, the vice-president, is a director of the hospital at Vargas, and Dr. L. Razetti another member of the committee is vice-rector of the University of Venezuela, and permanent secretary of the National Academy of Medicine. All of the members of Brazilian committee are actively identified with the anti-tuberculosis movement in that country. The Committee includes Dr. J. J. Azevedo Lima, of Rio Janeiro, President of the Brazilian Anti-tuberculosis League; Dr. Oswaldo Cruz, Director-General of the Department of Public Health; Dr. J. J. Seabra and Dr. Cypriano de Freitas, of Rio de Janeiro.

The president of the Cuban Committee is Dr. Guiteras formerly professor of pathology in the University of Pennsylvania and now at the University of Havana. Dr. J. L. Jacobsen the vice-president is president of the Cuban Anti-tuberculosis League. The secretary is Dr. M. G. Lebrede of Haven. Two well known members of this committee are Dr. Aristides Agramonte, the last surviving member of the famous yellow fever commission of the United States Army, and Dr. Carlos J. Finlay who was recently awarded the Mary McKinsley medal by the Liverpool Association for the Study of Tropical Diseases.

Dr. B. Patrikios, the Chairman for the committee for Greece is Secretary of the Department of Health of Greece, and Secretary-General of the Greek Red Cross Society. Dr. Aristote Kouzis, the Secretary is a professor of the University of Athens. Dr. Constant Savas, a member of the Committee is Professor of Hygiene in the University of Athens, and is physician to the King of Greece; Dr. P. Manoussos is the principal medical director of the military hospital at Athens; Dr. Kalliontzis is professor of surgery and Dr. Pierre J. Rondopoulo is professor of pathology at the University of Athens.

The Hon. Otto von Printzkold, the Chairman of the Swedish Committee, is the first chamberlain of the Swedish court. The secretary, Dr. Bertil Buhre, is the president of the great Swedish Anti-tuberculosis League, the largest volunteer association of the kind in existence.

The Costa Rican Committee has named Dr. Louis P. Jiminez chairman, and Dr. Teodoro Picado, of San Jose, secretary. Other members are Dr.

Teodoro Prestinary, Dr. Benjamin Hernandez and Dr. Marcos Zunega, all of San Jose.

Three chairmen have been named by the Austrian Committee. They are Prof. Leopold v. Schrotter, of the Medical Faculty of the University of Vienna; Dr. Weichselbaum and Dr. Richard Paltauf, of the Department of pathology of the University of Vienna. The secretaries are Dr. H. v. Schrotter, Dr. L. Teleky and Dr. J. D. Bartel.

Dr. M. Rousseff, director of the Department of Health of Sophia, is president of the Bulgarian committee; Dr. Ivan Oggianoff, secretary of the Superior Board of Health at Sophia, is secretary, and the members include Dr. Georghi Zolotovitch, Dr. Ivan Theororoff, director of the Sanatorium for Tuberculosis at Trojan, and Dr. S. A. Valcovitch.

TRAINING IN MEDICAL ORGANIZATION.—The students of the University of Pennsylvania Medical School have formed an organization, the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the State organizations and elect members to a House of Delegates which transacts all the business of the association. An annual meeting is held at which papers are read by chosen members, thus encouraging original research and a scientific spirit. The organization is named The Undergraduate Medical Association of the University of Pennsylvania, and already has over two hundred and fifty members.

INFORMATION REGARDING ANY ALLEGED RECOVERIES OR CURES OF INOPERABLE OR RECURRENT CARCINOMA OF THE MAMMARY GLAND IS DESIRED BY THE WRITER.—If any case or cases are known to anyone who reads this circular and can be authenticated by facts as to the history and condition prior to recovery, and the length of time which has elapsed since recovery, such information will be much appreciated and duly acknowledged.

Any well-authenticated reports of recoveries from carcinoma located in other parts than the mammary gland will be welcomed.

Cancer paste cures, X-ray cures, radium cures, or cures as result of surgical operation are not wanted.

Hearsay cases are not wanted unless accompanied by name and address of person who may give knowledge first hand.

Address Horace Packard, 470 Commonwealth Ave., Boston, Mass.

PERSONALS.—Dr. M. J. CORNTHWAITE (A. M. C., 1904), owing to ill health has returned to Rock City Falls, N. Y., from Schenectady.

—Dr. EDWARD H. VINES (A. M. C., 1905), has moved from New Paltz to 508 West 135th Street, New York City.

—Dr. ROBERT S. LIPES (A. M. C., 1907), has started practice at Athens,

MARRIED.—SCHERMERHORN-STEPHENSON.—Dr. John R. Schermerhorn of Schenectady (A. M. C., 1905), and Miss Mary Stephenson of this city, were married at the parsonage of the Grace M. E. Church, by the pastor, the Rev. W. H. Hammersley. The wedding was a quiet one, the couple being unattended. They left immediately for Washington, and upon their return will live at 56 Glenwood Boulevard, Schenectady.

DIED.—Dr. GEORGE JAMES HOLMES (A. M. C., 1863); a member of the American Medical Association; an ophthalmic and aural surgeon of New Britain, Conn.; sometime president of the New Britain Medical Society, and in charge of the eye and ear departments of the New Britain General Hospital; died at that institution, December 14, 1907, from pneumonia, after an illness of three days, aged 53.

—Dr. JACKSON A. HUBBARD (A. M. C., 1863); for many years a practitioner of Dubuque, Iowa, died at the home of his daughter in Mason City, Iowa, December 9, 1907, aged 74.

—Dr. RICHARD S. O'CONNELL (A. M. C., 1871); a member of the Wisconsin State and Manitowoc County medical societies, died at his home in Cato, Wis., December 9, 1907, aged 59.

—Dr. NATHAN AVERY CALDWELL (A. M. C., 1881); at one time health officer of the towns of Amsterdam and Hagaman, N. Y., and member of the consulting staff of the Faxon Hospital, Utica, N. Y., died at his home in Hagaman, December 20, 1907, while under anesthesia, preparatory to an operation for a disease of the bones of the leg, aged 51.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The Practice of Obstetrics. By American Authors. Edited by CHARLES JEWETT, M. D., Professor of Obstetrics in the Long Island College Hospital, Brooklyn, N. Y. In one handsome octavo volume of 786 pages, with 445 engravings in black and colors and 36 full-page colored plates. Cloth, \$5 net; leather, \$6 net; half morocco, \$6.50 net. Lea Brothers & Co., New York and Philadelphia.

In a subject of such limited scope as obstetrics, there are decided objections to a treatise by a variety of authors whose experience, knowledge and interest in the work are in uneven distribution. It requires an editor of no mean capacity to create a homogeneous entity from such materials. Too many authors, as "too many cooks," may have a disastrous effect upon the business in hand. However, Jewett has managed to rescue the treatise from mediocrity by a judicious leavening of a few contributors who are "au fait" with the obstetrical work of the day, so that the resulting treatise is a very useful hand-book for students.

The main objections to the work are its lack of uniformity of material and illustration. The chapters are unsigned, although the authors are indicated in the table of contents which is, however, meagre and unsatisfactory. The lack of authority of the book is due to the omission of the author's name before each chapter. The uneven character of the illustrations detracts from their merit and the numerous colored plates have apparently been inserted without any idea of their illustrative value. The majority of the illustrations have been taken from modern French and German works.

In spite of these faults, the book is useful and modern and should be of distinct use in the teaching of the elements. Three chapters stand out in the book as worthy of praise. Dickinson's chapter upon the diagnosis of pregnancy is the most valuable exposition of the subject and includes the result of his original investigation of the subject. In Toxemia of Pregnancy, Stone has collected the recent work upon this very important complication of pregnancy into a most admirable chapter. In the treatise, however, the Toxemia of Pregnancy is treated separately from Eclampsia in opposition to the more modern ideas of the subject, as Eclampsia is thought at the present time to be one of the manifestations of a toxemia. The chapter upon Eclampsia remains, as it was in previous editions, an interesting historical exposition of by-gone views. However, Stone has done much to help the subject in his chapter upon Toxemia.

Puerperal Infection has, in Williams, the best possible exponent of modern obstetrical thought and his chapter upon this subject is a credit to him and to the book. It is replete with reference and is a brilliant exposition of this protean complication of pregnancy, although it suffers from condensation into one chapter.

Apart from these chapters, the book is of fair merit, although it shows definite ear-marks, in the space devoted to the various subjects, of the time at which it was first published. Vaginal Caesarian section is given two pages, while hebotomy receives one and symphysiotomy is extensively written of and profusely illustrated. The publisher's work is good and the engraving is well done.

ELLICE MAC DONALD.

Essentials of Obstetrics. By CHARLES JEWETT, M. D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, Brooklyn, N. Y. Third edition, thoroughly revised. 12mo, 413 pages, with 80 engravings and 5 colored plates. Cloth, \$2.25 net. Lea Brothers & Co., Philadelphia and New York, 1907.

This little book is a condensation of Jewett's larger treatise and attempts to do justice in a few pages for what the larger work requires all its space to accomplish. It lacks clarity and definite accuracy of division to make it a useful student's quiz compend.

ELLICE MAC DONALD.

A Manual of Obstetrics. By A. F. A. KING, M. D., Professor of Obstetrics and Diseases of Women in the Medical Department of the George Washington University, Washington, D. C., and in the Medical Department of the University of Vermont, etc. Tenth edition, enlarged and thoroughly revised. 12mo., 688 pages, with thirty illustrations and three colored plates. Cloth, \$2.75 net. Lea Brothers & Co., Philadelphia, and New York, 1907.

The number of editions which this little compend of obstetrics has required is an evidence of its appreciation by the student body. It is a

most useful and valuable book and has been the help of those reviewing for examinations for many years. It is the only condensed and small obstetrical work which properly covers the subject. There is an astonishing amount of obstetrical information between its pages. The book has its very definite place of usefulness and should continue through more editions, as it no doubt will.

ELLICE MAC DONALD.

The Hygiene of Pregnancy. By WALTER B. JENNINGS, M. D., New York. *Medical Review of Reviews.* New York, 1907, pp. 48.

A popular guide for those who expect to become mothers and wish to educate themselves upon the subject from a text-book.

ELLICE MAC DONALD.

Gynecology and Abdominal Surgery. In two large octavos. Edited by HOWARD A. KELLY, M. D., Professor of Gynecologic Surgery at Johns Hopkins University; and CHARLES P. NOBLE, M. D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. *Volume I.* Large octavo volume of 851 pages, with 405 original illustrations by Mr. HERMANN BECKER and Mr. MAX BRODEL. Philadelphia and London. W. B. Saunders Company, 1907. Per volume: Cloth, \$8 net; half morocco, \$9.50 net.

In the preface to this volume, the editors call attention to the intimate relationship between gynecology and abdominal surgery, and bearing this in mind have planned a work which should be of great value not only to the general surgeon and gynecologist but also to the general practitioner. As in other works written by many authors, it has the advantage of presenting each subject by one especially interested in that subject and also making the reader acquainted with the views and style of its many contributors.

The contents of volume I are as follows: Gynecologic Technique, by H. A. Kelly; Bacteriology, by W. W. Ford; Pathology of the Reproductive Organs, by E. Hurdon; Medical Gynecology, by C. P. Noble and B. M. Anspach; Non-plastic Operations of the Vulva and Vagina, by A. M. Fullerton; Plastic Operations on the Perineum, Vagina and Cervix, Curettage of the Uterus and Inversion of the Uterus, by C. P. Noble; Combined Gynecologic Operations, by G. M. Edebohls; Diseases of the Bladder and Urethra, by G. L. Hunner; Vesical Fistulae, by H. A. Kelly; The Preparatory Treatment of Celiotomy Cases, After Treatment of Celiotomy Cases, The Celiotomy Incision, Operations for Retro-displacement and Prolapse of the Uterus, by C. P. Noble; Ovariectomy, by A. J. C. Skene; Vaginal Section for Diseased Ovaries and Tubes, by H. T. Byford; Removal of the Uterine Appendages, by J. C. Webster; Abdominal Hysterectomy for Inflammation of the Uterine Appendages, by J. M. Baldy; Vaginal Drainage for Pelvic Abscesses, by H. A. Kelly; Abdominal Hystero-myomectomy and Myomectomy, Vaginal Myomectomy, by C. P. Noble; Radical Abdominal Hysterectomy for Cancer of

the Uterus, by J. G. Clark; The Byrne Method of Treatment of Carcinoma of the Uterus, by X. O. Werder; Vaginal Hysterectomy, by T. Henrothin; Conservative Operations on the Ovaries and Tubes, by H. A. Kelly; Operations before Puberty, by H. A. Kelly and E. Hurdon.

Two of the writers for this volume, Drs. A. J. C. Skene and F. Henrothin have died during the preparation of this work and the chapters written by them are their last contribution to gynecology.

The table of contents, with the names of the contributors, is in itself a review of the work and a sufficient guarantee of its merits.

The previous writings of many of the contributors, on the subjects contained in this volume are well known to the medical profession and on this account their present contributions are all the more welcome, especially as each subject has been brought up to date and clearly illustrated by drawings specially prepared for this work.

The separate chapters on bacteriology and especially the one on the pathology of the pelvic organs are most excellent and fully present the scientific basis of gynecology. The elaborate and carefully prepared chapter, of 117 pages, on Medical Gynecology should prove of great interest and value not only to the student and general practitioner but also to the general surgeon and specialist.

Most of the drawings were made by Mr. Hermann Becker and some by Mr. Max Brödel and others.

The book making is of the best and it together with the illustrations make it one of the most attractive appearing medical works published.

J. A. S.

Modern Surgery: General and Operative. By J. CHALMERS DA COSTA, M. D., Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College, Philadelphia. Fifth revised edition, enlarged and reset. Octavo volume of 1283 pages, with 872 illustrations, some in colors. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, \$5.50 net; half morocco, \$7 net.

The above volume appears in its fifth edition in a revised and partly re-written form. There is no pretense made at an exhaustive discussion of all the phases of modern surgery, but a general survey of the field is presented and the more important subjects especially emphasized. The early chapters of this volume deal with the general subject of surgical bacteriology and pathology and thus lay the foundation for the presentation of the clinical and technical features of surgical diseases in the succeeding chapters. There is no claim of originality of conception or presentation of the subject matter, but merely the arrangement in a single volume of the most important features of general surgery. The volume contains 1283 pages and 872 illustrations, many of which are quite satisfactory, although very few of them are original. The chapters on fractures and dislocations have been especially exhaustively treated and very properly so, because of the great importance of this subject to the

general practitioner, to whom, as well as the medical student, this volume will especially appeal. That the work supplies a positive want is evidenced by the fact that it has already run through four editions, each one of which has been an enlargement and improvement upon the one preceding. There is every reason to believe that the present volume will be well received, and it can be especially recommended to those who desire a brief but accurate and comprehensive survey of the field of general surgery without the usual clinical and technical detail.

A. W. E.

Surgery: Its Principles and Practice. In five volumes. By sixty-six eminent surgeons. Edited by W. W. KEEN, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. *Volume II.* Octavo of 920 pages, with 572 text-illustrations and nine colored plates. Philadelphia and London. W. B. Saunders Company, 1907. Per volume: Cloth, \$7 net; half morocco, \$8 net.

The second volume of this exhaustive system of surgery maintains the high standard of excellence established by the first volume which appeared a few months since. The volume contains 920 pages of subject matter, with 572 text-illustrations and nine colored plates, and is simply a continuation of volume one. The opening chapter on Diseases of the Bones is written by Dr. Nichols, than whom no one is better qualified to discuss this subject. It presents a general resumé of bone pathology and forms the foundation for the three succeeding chapters which are devoted to fractures, surgery of the joints and dislocations. These first four chapters occupy nearly one-half of the volume and give a general resumé of these subjects with a brief description of the appropriate treatment of each special condition. Surgery of the muscles, tendons and bursae is the subject of the next chapter which, while brief, is of great value, because it emphasizes the importance of many conditions to which too little attention is frequently paid. Orthopedic surgery is the subject of chapter six and, while by no means an exhaustive presentation of the subject, it nevertheless contains the essentials of this department of surgery and, written by Dr. Lovett, it will be recognized as modern and rational in every particular. Chapter seven is devoted to the surgery of the lymphatic system which concerns itself mainly with the results of obstruction of the lymphatic vessels, inflammatory processes in the lymphatic glands and Hodgkin's disease. Surgery of the skin, which is the subject of chapter eight, groups a variety of disorders of the skin and its appendages which are of considerable importance and which frequently demand the most careful surgical treatment. Blastomycosis is among the important conditions treated in this chapter. A chapter by Dr. Spiller on the pathology of the chief surgical disorders of the nervous system and its importance in clinical diagnosis brings to the surgeon's attention the important changes which frequently demand

surgical treatment, most of which are either of inflammatory or neoplastic character. The surgery of the nerves is the subject of chapter ten, neuralgia and wounds and injuries of the nerves being the most important subjects treated. An especially important chapter, because of its medico-legal aspect, is the one devoted to traumatic neurasthenia, traumatic hysteria and traumatic insanity, the diagnosis of these conditions being presented in an unusually clear and satisfactory manner. Surgery among the insane and the surgery of insanity is a subject not usually presented in a system of surgery, but is none the less of value in indicating that the physical condition of insane people should receive the same rational treatment as does that of the sane, even though the mental condition may not be materially benefited thereby. The volume concludes with a chapter on the surgery of the spine, which presents the results of modern methods of surgical treatment of injuries of the spine as well as diseases and tumors of the vertebrae, membranes and cord. The entire volume is most satisfactory from every point of view and will undoubtedly be most cordially received by the surgical profession at large, while it will also be of great value as a reference book to the general practitioner of medicine.

A. W. E.

Tuberculosis as a Disease of the Masses and How to Combat It. Fourth issue, revised and illustrated by S. A. KNOPF, M. D., New York, Director in the National Association for the Study and Prevention of Tuberculosis; Associate director of the Clinic for Pulmonary Diseases of the Health Department; Visiting Physician to Riverside Sanitarium for Consumptives of the City of New York, etc.

This essay was awarded the prize offered by the "International Congress to Combat Tuberculosis as a Disease of the Masses" in July, 1900.

Since its first appearance, the essay has passed through three editions, this one being the fourth. A supplement of four chapters has been added to this edition to include new material relating to Home Hygiene, School Hygiene, the Installation for the Sanitarium Treatment at Home and a short historical review of the anti-tuberculosis movement in the United States.

The work has been translated into twenty-one different languages and thus is made readable in all parts of the civilized world.

The subject is presented in a very clear way. It is concise and, while in no sense exhaustive, it gives both physicians and laymen an excellent well-rounded conception of the tuberculosis problem.

The State Department of Health has obtained 5,000 copies for distribution and it seems to us that this is an example worthy to be followed by city departments of health, district branch and county societies. There is no short pamphlet in existence, to our knowledge, which approaches the educational value of this one, and it is therefore admirably suited to the education of the general public and will do much toward gaining its co-operation which is absolutely essential to a successful crusade against tuberculosis.

H. W. C.

Diseases of the Stomach. By DR. I. BOAS, Specialist in Gastro-enteric Diseases in Berlin, Germany. The sole authorized English-American edition from the latest German edition. By ALBERT BERNHEIM, M. D. (Freiburg, Germany), Assistant to the late Dr. D. D. Stewart at the Philadelphia Polyclinic Hospital and Post-graduate School, as Instructor in the Department of Diseases of the Stomach and Intestines, etc., etc. Appropriately illustrated with five full-page plates and sixty-five engravings in the text. 730 royal octavo pages. Extra cloth, \$5.50 net; half morocco, \$7 net. Sold only by subscription. F. A. Davis Company, Publishers, 1914-16 Cherry street, Philadelphia, Pa.

This book is a translation of the well known "Diagnostik und Therapie der Magenkrankheiten" of the Berlin specialist. The work is one of considerable magnitude, practically 700 pages, and is distinguished from most text-books on the subject by the great amount of space occupied by the consideration of the methods of diagnosis and treatment. More than half the book is taken up by the discussion of the normal anatomy and physiology of the stomach, methods of case taking and examination, the different chemical methods of examining test meals, the diagnostic significance of urinary and blood examinations, and a consideration of the general therapeutics of gastric disorders. The second part of the book takes up in detail the symptomatology and special therapy of the diseases of the stomach. The different forms of gastritis, the peptic ulcer, motor insufficiency, displacement, cancer, syphilis, tuberculosis, and the neuroses, are all fully considered. The book terminates with an index of subjects and one of authors.

The first part of the book is, for the most part, eminently satisfactory. The author goes into considerable detail in describing methods of physical and chemical examination which are of value in diagnosis. He notices most of the more unusual methods which have not come into general use, but does not lay too much stress upon them. The least satisfactory of the chapters in the section is that on the blood in gastric disorders, which shows less familiarity with the literature than the other sections. However, this is of no great importance, for the value of blood examinations in gastric disease is at present very slight. The practical everyday methods of examination are fully described.

The second part of the work is up to the standard of the first. The clinical descriptions are clear and systematic, and yet exceptions to the average case are recognized. The discussions on differential diagnosis are helpful and well worked out. The treatment is given with a reasonable amount of detail. The translator has added to the book the important American work on the subject, especially from the surgical viewpoint, and this increases the value of the book. The volume impresses one throughout as being based upon a wide experience, and as reflecting the personal views of one thoroughly familiar with the subject. It is well printed in clear type, and well indexed. It should prove very valuable both to student and to the practitioner.

G. B.

A Treatise on Diseases of the Skin. For the use of advanced students and practitioners. By HENRY W. STELWAGON, M. D., Ph. D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Fifth edition, revised. Handsome octavo of 1150 pages, with 267 text-illustrations, and 34 full-page colored and half-tone plates. Philadelphia and London. W. B. Saunders Company, 1907. Cloth. \$6 net; half morocco, \$7.50 net.

After a lapse of but two years a new edition, the fifth, of this excellent work appears. It has been thoroughly revised, considerable material has been eliminated making room for the addition of new articles without increasing perceptibly the size of the volume. A description of the skin lesions of leukemia and pseudo-leukemia have been added to this edition with bibliographical references. Most of the other new matter is confined to articles on skin diseases found in tropical countries. They are well illustrated. The book, already excellent, has been improved by its revision and the addition of the new matter referred to. The volume is now so well known that it needs no further recommendation from us.

H. W. C.

Physical Diagnosis. With Case Examples of the Inductive Method. By HOWARD S. ANDERS, A. M., M. D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia; Physician to the Philadelphia General Hospital, Tuberculosis Department; Late President of the Pennsylvania Society for the Prevention of Tuberculosis; Member of the American Medical Association, American Climatological Association, American Association for the Advancement of Science, etc. New York and London. D. Appleton & Company, 1907.

Dr. Anders attempts to cover in this work of about 450 pages the main facts of physical diagnosis, and desires to emphasize especially the necessity for the student acquiring the details of technique, and learning to reason out the diagnosis from the physical signs. After an introductory chapter, the author takes up the normal and pathological topography of the chest, and then covers the physical diagnosis of the lungs in a systematic manner, taking up inspection, palpation, percussion, and auscultation in their regular order. A special chapter is devoted to the diagnosis of the different diseases of the chest, the method employed consisting in the presentation of case histories, and analyses of the same. The heart, pericardium, and vessels are considered in a similar manner. Three chapters are then devoted to the abdomen and its contents, and there is a final chapter by Dr. Pfahler on the Roentgen ray in medical diagnosis.

Dr. Anders' book is well written, and, as a rule, clear, concise and accurate. There are occasional omissions, and a few slips, which will doubtless disappear in subsequent editions. Thus Grocco's sign is insufficiently considered, and the percussion of the spinal column, the importance of which has been emphasized by Koranyi, is not considered at all. Broadbent's sign is not discussed with sufficient fulness, especially

as regards its occurrence, or the occurrence of pseudo-Broadbent signs, in conditions other than adherent pericardium. The fact that a mitral presystolic murmur may be heard in adherent pericardium is not mentioned. The statement is made that a distended colon passes over kidney tumors, whereas, as a rule, this is only true of the left kidney. The author's extreme optimism as regards the diagnostic significance of heart murmurs indicates that he has failed to follow a sufficient number of his patients to the autopsy table. In the main the book is a good one, and worthy of a place on the shelves of the student or practitioner. Dr. Pfahler's skiagrams are excellent.

G. B.

The Sexual Instinct, Its Use and Dangers as Affecting Heredity and Morals. By JAMES FOSTER SCOTT, A. B. (Yale), M. D., C. M. (Edinburgh); late Obstetrician to Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C.; late Vice-President of the Medical Association of the District of Columbia, etc. Second edition, revised and enlarged. New York. E. B. Treat & Co., 1908. Cost, \$2.50.

In the preface to this, the second edition of his work, the writer states: "It is a matter of extreme thankfulness to me that this book has received almost uniform approval from the medical, religious and lay press." A perusal of the views put forth certainly indicate it to be a most useful effort and it is difficult to see how it could work harm. Indeed, at this time, when individuals prominent in a great variety of activities are forming associations, not only in this country but abroad, for the promotion of moral and social prophylaxis, such a work is most timely and should be of great educational value.

This edition is changed somewhat from the original. The chapter on Perversions has been dropped, two new chapters have been added, and a very satisfactory index has been substituted for the imperfect table of contents of the last edition.

Chapters one to five treat of the sexual instinct, its importance and influence, the physiology of the sexual life, the consequence of impurity, and influences which excite to sexual immorality. Chapters six and seven are devoted to the problem of prostitution. Chapters eight to ten, inclusive, describe criminal abortion, venereal diseases and onanism. The closing chapters, "Pro Bono Publico" and "Marital and Extra-Marital Intercourse," are of the nature of sermons and lack the scientific basis which gives real value to most of the preceding chapters. The author's attitude, as well as the general scope of the book, may be gathered from the following sentence taken from his preface: "In this book are accumulated without equivocation those things which are directed to the conduct of men. The feminine half of humanity is left out of our councils, but by no means for the reason that ignorance is a safeguard to them."

Transactions of the American Dermatological Association at its Thirtieth Annual Meeting, Cleveland Ohio, May 31, June 1 and 2, 1906.
Official Report of the Proceedings by GEORGE W. WENDE, Secretary.

This volume of 247 pages contains a list of the officers and active and honorary members of the Association. The papers presented at the meeting number twenty-one and take up the greater portion of the volume. Following these are the reports of the cases shown at a clinical session at the Lakeside Hospital. There is also a table showing the combined returns of the various skin diseases seen by the members during the year.

Dr. M. B. Hartzell, of Philadelphia, in his address, calls attention to dermatology as a field for original research. He properly emphasizes the wide field offered by dermatology to the solution of some problems which are of great importance to dermatologists. For instance, the close relation of hyperkeratosis and hyperpigmentation to cancer; the "immunity" often seen in carinate eruptions when at the point of coalescence of two circles the eruption disappears; absence of reinfection in scars of syphilides; the antagonism between general diseases and skin diseases shown in the disappearance of psoriasis during typhoid fever and other general infections. The action of drugs used locally in skin diseases and their effect on skin, sweat and sebaceous glands is a field almost untouched.

The bacterial flora of the skin needs careful investigation before much satisfactory work can be done on the bacteriology of skin diseases.

The articles following are instructive and the discussions are given in full. The illustrations are clear and well reproduced. H. W. C.

A Manual of Personal Hygiene: Proper Living upon a Physiologic Basis.
By Eminent Specialists. Edited by WALTER L. PYLE, M. D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia. Third revised edition. 12mo of 451 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, \$1.50 net.

Since this book was first issued, in 1900, it has been reprinted four times and revised twice, the present edition being the third; this fact alone testifies to its value and to the warmth of its reception. As it is intended for lay readers, as much or even more than it is for the profession, purely technical phraseology has been avoided as much as is compatible with the scientific value of the text, and a glossary of purely medical terms has been added in the appendix. The work is divided, as in former editions, into sections, treating respectively of the hygiene of the digestive apparatus, of the skin and its appendages, of the vocal and respiratory apparatus, of the eye, of the ear, the brain and nervous system, to which has been added new sections upon Home Gymnastics and upon Domestic Hygiene, and in the appendix a short description of its similar methods of Hydro-, Thermo-, and Mechano-therapy, and a section upon First Aid in Medical and Surgical Accidents and Emergencies. The old sections have been thoroughly revised.

The subject matter is well chosen and the text well written. The book can be warmly recommended. Such recommendation can be best expressed by stating that the book adequately fulfills its purpose as indicated by the following excerpts from its introduction, "The literature for the layman pertaining to personal hygiene is, in great measure, unsatisfactory and irresponsible. Many of the so-called 'Health Books' are of very questionable authorship. * * * They make hypochondriacs of their readers and if they include advice as to self treatment, they may do great harm. What is needed is simply instruction by capable teachers in the proper care and use of the body, based upon the best available modern, scientific data. We should not have 'every man his own physician,' but rather give him fundamental knowledge that will enable him to understand, and if necessary formulate, the requisite rules of health, and to distinguish scientific medicine from quackery. Knowledge in this direction should come from the American medical profession. The subject is much too important to be left entirely in the hands of lay teachers and writers.

C. K. W., JR.

Diseases of the Intestines and Peritoneum. American Edition of Nothnagle's Practice. By Dr. HERRMANN NOTHNAGEL, of Vienna. Edited, with additions, by H. D. ROLLESTON, M. D., F. R. C. P., Physician to St. George's Hospital, London, England. Second edition. Octavo of 1059 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, \$5 net; half morocco, \$6 net.

The excellence of this monograph is perhaps well shown by the fact that its popularity necessitated a second printing in January, 1905, of the first edition (June, 1904), and now in somewhat more than two years (May, 1907,) a second edition is found necessary. The work has been thoroughly revised and many additions have been made by the editor, though Prof. Nothnagle's original text has been allowed to remain unaltered.

About three-quarters of the book are devoted to the diseases of the intestines and the remaining quarter to those of the peritoneum. Appendicitis is discussed in great detail (in somewhat over one hundred pages), under the latter division. In lieu of the term "Appendicitis," a Latin root with a Greek ending and hence contrary to all rules of etymology, the author suggests the term "Scolecoiditis" as being of purely Greek origin and meaning just what it is intended, an inflammation of the vermiform appendix. No mention is made in the original text of Carcinoma of the Appendix, but the editor has added a note on the subject under the heading of Carcinoma of the Intestines.

The translation is well done and the bibliography extensive. The index is very complete. The book is not illustrated except for several plates showing well the abdominal contour and the superficial pattern of normal peristalsis and that accompanying the various forms of intestinal obstruction.

C. K. W., JR.

GYNECOLOGY

Edited by John A. Sampson, M. D.

*The Pathology of Chronic Metritis.*WILLIAM FLETCHER SHAW. *Journal of Obstetrics and Gynecology of British Empire*, February, 1907.

So called "chronic metritis" is a subject which has been clinically recognized and on which much has been written since early times, but it is only comparatively recently that its pathology has been discussed on anything like a scientific basis. Even now there are hardly two authors who agree as to its causation and its pathology. The reason for these views, probably lies in the fact that only in very recent years have uteri been extirpated for chronic metritis, the older writers having argued from postmortem uteri, which had the same characteristics as those diagnosed as chronic metritis, viz., enlargement and increased hardness during life. Even since these uteri were extirpated the views of modern gynecologists seem as much at variance as those of the older writers, the most likely explanation being, that all the writers, except Lorentz and Theilhaber, were recording the results of the examination of only a small number of such uteri.

In this paper are given the results of the microscopical examination of thirty-eight uteri extirpated for chronic metritis alone and of seven extirpated for chronic metritis along with some other concurrent disease; three had carcinoma of the cervix, two had intramural fibroids, one had tubo-ovarian abscess and one had tubo-ovarian disease. For comparison with these were examined twenty-three normal uteri from patients of various ages and the endometrium removed by curetting in fifty cases of endometritis, the chief object of the latter being a comparison of their clinical histories with those of the chronic metritic uteri. In the following paragraphs dealing with the change in the blood vessels, endometrium and connective tissue the figures are derived solely from the thirty-eight cases of uncomplicated chronic metritis.

Pieces were taken from several portions of each uterus, and sections cut in paraffin so that each one included the whole thickness of the uterine wall from peritoneum to mucous membrane. These sections were stained with "van Gieson" as being the best differential stain for muscular and connective tissue, the connective tissue being bright red and the muscular tissue deep yellow.

Although differing in many points most authors consider the pathology of chronic metritis to fall into one of two groups:

- (1) changes in the vessels,
- (2) increase in connective tissue.

1. Changes in the Blood Vessels.

Several of the older writers attribute the bleeding of chronic metritis to be due to changes in the vessel walls, which they describe as atheroma. Reinecke, in 1896 and Finley, in 1905, each published four cases in which they considered the hemorrhage to be due to arteriosclerosis, the thickening being chiefly in the tunica media.

Theilhaber found the vessels markedly increased in all his specimens, and the walls generally thickened, but he does not attach much importance to this.

The author investigated the condition of the blood vessels in the thirty-eight cases of chronic metritis, and compared their appearance with those of normal uteri at all ages, with the following results:

Vessels not altered fifteen.

A few vessels enlarged but walls not thickened, two.

Vessels decreased in number, six.

Vessels increased in number, four.

A few vessels with thick tunica media containing fibrous tissue, six.

A few vessels undergoing hyaline or colloid degeneration, four.

A combination of the last two, one.

In twenty-one, that is fifty-five per cent., the vessels were not increased in number, nor were any changes observed in the vessel walls, but in the histories of these twenty-one, hemorrhages were of quite as frequent occurrence as in the other seventeen. In six some of the larger arteries showed increase in thickness of the media, the result of fibrous deposit. This is the condition to which Reinecke, and Finley, ascribed the hemorrhage of chronic metritis. In this the author does not agree as he found it only occurring in a few vessels in six specimens out of thirty-eight stained. Moreover of these six, three had no excessive hemorrhages and he found this change in the vessels of many multiparous normal uteri. In five instances the arteries showed a homogenous degeneration affecting the media and adventitia. Auspaci and MacGregor mention this change and the latter finds it in the vessels of the endometrium in uteri which show this degeneration in the mesometrium. In none of the author's specimens did he find a trace of it in the vessels of the endometrium.

From these results it seems clear that the hemorrhage of chronic metritis does not depend upon changes in the vessel walls of the mesometrium.

The seven uteri extirpated for chronic metritis with some concurrent disease also showed little vessel change, in five of them the vessels were not altered, in one the number of vessels was increased but there were no other changes, while only one possessed vessels with thickened tunica media due to a deposit of fibrous tissue.

2. Changes in the Relative Amounts of Connective Tissue and Muscular Tissue.

The most generally accepted view of the pathology of chronic metritis is that a great increase of connective tissue has taken place. Theilhaber says the amount of muscular tissue is also actually decreased; this he believes to occur normally, as the menopause is reached and the excessive bleeding then commences owing to the loss of muscular control over the vessels unless these have proportionately contracted.

The methods of estimating the amounts of connective tissue and muscular tissue was as follows: The slide was put on a mechanical stage, under "the high power" of a microscope, and connective fields estimated through the whole length of the section; as these uteri were so thick

this generally meant forty to fifty calculations for each section. Forty-five uteri were examined this way, and also for comparison, twenty-seven uteri obtained postmortem from women of different ages who had not complained of any uterine symptoms during life.

The author divides the specimens into four groups.

(1) The connective tissue occurs as dense darkly-staining strands between the muscle bundles, very little connective tissue being present between the muscle fibres.

(2) The connective tissue occurs as in number one but it also occurs in fine strands between the muscle fibres.

(3) The connective tissue is a loose meshwork between the muscle bundles, little connective tissue being present between the muscle fibres.

(4) The connective tissue occurs as a loose meshwork between both the muscle bundles and muscle fibres.

The connective tissue is never equally distributed through the uterine wall; hence a section of one part must not be taken as indicating the proportion existing throughout the uterus. Thus the inner third of the uterine wall almost invariably shows a relatively small proportion of connective tissue to muscle.

In the forty-five uteri examined the author found general enlargement of the uterus, the result of hypertrophy of both muscular and connective tissue elements of its wall. In a few cases only did the vessels show marked changes. In every instance endometritis as shown by increased thickness of the endometrium, was present in the thirty-eight specimens of uncomplicated chronic metritis.

The author's observations do not confirm Theilhaber's view; viz., that with increase of connective tissue there is actual decrease in muscular tissue. The increase in size is due to a general hypertrophy of both elements.

Lorentz in chronic metritis places the proportion of connective tissue at forty-five per cent. to sixty per cent.; average at fifty and five-tenths per cent. The author's results vary from thirty-two and five-tenths per cent. to fifty per cent.; average forty and four-tenths per cent. It is thus clear that the difference between the proportion of connective tissue in normal uteri and in chronic metritis amounting only to four per cent. in Meier and Lorentz's cases and eight-tenths per cent. in the author's case, is too slight to account for the great increase in thickness of the uterine wall.

Condition of mucus membrane.

Theilhaber states that thickening of the mucous membrane is rarely found in chronic metritis, and when present is due to venous stasis. Of the author's thirty-eight cases thirty-three had a thickened endometrium and showed changes in the glands which distinguished them from normal endometrium.

(1) Glands smaller than normal, four specimens.

(2) Glands enlarged, five specimens.

(3) Glands increased in number, ten specimens.

(4) A combination of two and three, ten specimens.

(5) The stroma increased, three specimens.

(6) A combination of four and five, three specimens.

The density of the stroma varies very much even in the same specimen. In only eight specimens was the stroma found less dense than normal and in many it was denser; but even if the stroma were oedematous in every specimen, venous stasis would not explain the hyperplasia of glands found in so many instances. These changes in the endometrium along with the simple hypertrophy of the mesometrium, were found to be the only constant changes in uteri extirpated with the diagnosis "chronic metritis."

M. D.

The Radical Abdominal Operation in Carcinoma of the Cervix Uteri.

WERTHEIM. *Surgery, Gynecology and Obstetrics*, 1 January, 1907.

Prof. Wertheim of Vienna was invited to this country by the editors of the above-mentioned journal and, at a joint meeting of the Chicago Gynecological and Chicago Medical Society on October 10, 1906, he presented his experience with the radical abdominal operation for cancer of the uterine cervix. He spoke of the development of abdominal hysterectomy for cancer and calls attention to the fact that the usual abdominal hysterectomy does not give any better results than the removal of the uterus by the vaginal route. He described the various steps in the operation as now used by him.

During the last eight years 345 patients with cancer of the uterine cervix have been operated upon by him and his associates. For a long time the primary mortality ranged from fifteen to eighteen per cent. The cause of death in the majority of cases seemed to be due to shock. The patients would die at the end of twenty-four to forty-eight hours, without any trace of infection or peritonitis. With their improved technique the primary mortality has been reduced to eight per cent. in the last one hundred cases and he considers that only six of these were due to the operation. He used lumbar anesthesia, stovain and adrenalin in fifteen cases, and it was necessary to resort to general anesthesia in only two of these. He has been able to operate on fifty per cent. of the cases coming under his observation during that time and of those, where five years or longer has elapsed, sixty per cent are free from recurrence. Previously he had been able to operate on only fifteen per cent. of the cases by the vaginal route and only from twenty to thirty per cent. were free from recurrence at the end of five years.

He considers that the superiority of the abdominal operation lies not so much in the removal of the pelvic lymphatics as in the wide excision of the primary focus. He states that the value of the removal of the pelvic lymph nodes has not yet been decided. While the growth has returned in the majority of the cases where the pelvic lymph nodes have been proven to be cancerous, some of these cases are free from recurrence after four and four and a half years.

In closing he calls attention to the value of an early diagnosis and of the good work of Winter who has done so much to educate the laity of his community along these lines. The best results will be obtained when it is possible to employ the radical operation in the early cases.

A Contribution on the Occurrence and Retention of Foreign Bodies in the Abdominal Cavity. (Beitrag zur Frage der Fremdkörper in der Bauchhöhle und über das Verhalten des Bauschfelles den Fremdkörpern gegenüber.)

GRUZDEW. *Zentralblatt für Gynäkologie*, November 17, 1906.

The writer states that any one, who has witnessed a difficult laparotomy, can readily understand how an instrument or a piece of gauze could be easily overlooked and left in the abdominal cavity. This unfortunate accident has occurred frequently, and in 1904, Neugebauer had collected from the literature 197 cases. Of these cases about fifty per cent. were pieces of gauze (tampons, etc.), thirty per cent. sponges and fifteen per cent. instruments. Gruzdew reports the following case because of the long retention of the foreign body in the peritoneal cavity.

The patient, a woman fifty-eight years of age, was admitted to the Gynecological Clinic of Kazan University in September, 1905. She complained of abdominal pain due to a sharp-pointed foreign body, which protruded through the abdominal wall. Seven years before her admission, a large ovarian cyst had been removed by a competent gynecologist. Her convalescence had apparently been normal and she felt well for about a year. After that time she began to have abdominal pain, which increased in severity and became localized in one place in the anterior abdominal wall. About three months ago a sharp-pointed object appeared at this place, and it was on account of this that she came to the clinic.

On examining the patient, a scar was found which extended from the umbilicus to the symphysis. To the right of this scar and about the width of four fingers from the umbilicus, there projected through the abdominal wall two centimeters of a large artery clamp. The clamp was firmly imbedded in the abdomen and about it a small quantity of purulent fluid could be expressed. Abdominal palpation was painless, except about the instrument. By vaginal palpation the handle of the clamp could be distinctly felt in the cul-de-sac of Douglas; it was somewhat movable, there was no induration about it and palpation did not cause pain.

The clamp was easily removed by an incision through the posterior vaginal vault, and the convalescence was uneventful.

The instrument proved to be a Terrier clamp twenty-two centimeters long; the width of the handles was seven centimeters. The entire clamp, except for the part projecting through the abdominal wall, was enveloped by a dense white membrane from one to one and five tenths millimeters thick. The microscopical examination of this membrane showed that it consisted of layers of dense fibrous tissue with few cellular elements. In the tissue itself and also in some of the cells iron rust was found.

The writer reviews the cases collected from the literature by Neugebauer, where instruments had been left in the peritoneal cavity. Six of these patients died from sepsis and the instruments were found at autopsy. In another case, the instrument was recovered soon after operation, the patient having died from strychnine poisoning. In four cases the in-

strument worked its way into the intestine and was spontaneously passed through the anus, in one four years, in two, ten months and in the fourth, nine months after the operation. In another case the forceps penetrated the urinary bladder. In three instances the instruments were discharged through an abscess in the anterior abdominal wall, in one, eight months and in the other two, six months after the operation. In another patient the instrument was removed through a drainage tract. In another the operator felt the instrument just before closing the abdominal wall, and in three the absence of the instrument was noticed soon after the operation, and a secondary operation was done and the missing instrument removed. In one case the instrument eroded the walls of the left iliac artery and at the second operation, one and a half years after the first, the patient bled to death. In another, the instrument was found in the caecum two years after the first operation, in two other cases the instruments had worked their way into the intestines and in one of these a fecal fistula occurred.

The writer was unable to find a case similar to his, i. e., where an instrument had remained in the peritoneal cavity for seven years without causing serious injury to any of the internal organs.

A Pair of Forceps in the Abdominal Cavity for Ten and a Half Years.

J. E. F. STEWART. *British Medical Journal*, February 9, 1907.

The writer of this communication was called to see a woman, forty years of age, for an attack of diarrhea associated with vesical irritability. During the palpation of the abdomen he felt what he thought was a pair of artery clamps. The instrument seemed slightly movable and manipulation of it caused but very little discomfort. An X-ray examination was made and a shadow of the instrument, a pair of straight artery clamps, could be clearly seen in the pelvic cavity.

The patient stated that ten and a half years ago she had been operated upon and an ovarian cyst had been removed. She had been more or less of an invalid ever since, although at times she had been well enough to participate in dances. Her chief symptoms had been abdominal pain associated with constipation alternating with diarrhea.

The patient consented to an operation and the intestines were found matted together and the forceps could be felt, apparently with the lumen. The loop of the intestine containing the forceps was incised and the instrument was removed. It was found that two loops of the bowel had been caught between the handles thus causing an anastomosis between these loops and making a short circuit between two portions of the intestines about a foot apart. The incision in the intestines was closed and the short circuit was not disturbed.

The convalescence was uneventful.

ALBANY MEDICAL ANNALS

Original Communications

STATE CAMPAIGN FOR THE PREVENTION OF TUBERCULOSIS.

*Addresses Given at a Public Meeting in Harmanus Bleecker Hall, Albany,
N. Y., January 27, 1908.*

UNDER THE AUSPICES OF THE

STATE CHARITIES AID ASSOCIATION

IN COOPERATION WITH THE

STATE DEPARTMENT OF HEALTH.

HON. SIMON W. ROSENDALE:

(Commissioner, State Board of Charities of New York)

At the recent annual conference of the State Charities and Correction Governor Hughes made, as he always does, an eloquent address, and very eloquently referred to that conference and the delegates there in attendance as the representatives of the organized militia of philanthropy. In that view this meeting which has responded to the bugle call of one of the divisions of that militia of philanthropy may well be taken as a militant body ready as it is and we are to give battle to one of the most serious enemies of our beloved commonwealth, and our first duty in that regard, therefore, will be to salute the chief magistrate of this beloved state, and to salute him particularly as the commander-in-chief of all its military and naval forces. And our further duty will be to report to the great general of this great division of the militia of philanthropy that distinguished gentleman the President of the State Charities Aid Association, who not only deserves the title of general of the division, but has

worthily earned the greater title of field marshal in the international army of philanthropy. I take great pleasure in presenting the presiding officer of the evening, Hon. Joseph H. Choate.

HON. JOSEPH H. CHOATE:

(President State Charities Aid Association)

Ladies and Gentlemen: It is by a very narrow chance that I am here to speak to you at this moment. The battle against tuberculosis is as nothing compared with the battle at the front door of this hall when I came in. One young lady was dragged through the crowd at my side at the top of the steps. I think there was a good deal of damage done by that crowd pressing to get in. Mothers were scattered from their daughters. I heard this young lady crying out "I wonder where my mother is." Mothers, and daughters, husbands and wives, were separated on the steps of the hall.

I consider it a very great honor to be called upon to preside here to-night, in the capital of the state, at a meeting assembled for so great and good a cause as this. It is now five years since, in the city of London, I attended a meeting equaling this in numbers and enthusiasm called for this same purpose, presided over by the Duke of Cambridge and supported by the ambassadors of all the nations to set in motion a campaign against tuberculosis. That campaign, I believe, in these five years has done a vast deal of good. In the State of Massachusetts great progress has been made in the same direction, and there they have suffered terribly. Since the foundation of the colony, consumption tuberculosis has been the great ravager of the New England population. I am not surprised to see by the statistics that 3,000 deaths a year in the single State of Massachusetts are to be credited to that dread foe. I am afraid that the State of New York is a little behind in this business, especially in the districts outside of the city of New York, where very considerable progress has been made. If I am rightly informed, the death rate from this particular cause, tuberculosis, in the last twenty years in the city of New York has diminished something like fifty per cent. Very great efforts have been made there. Many expedients have been resorted to and above all the vicious crime of spitting has been very largely suppressed. You can ride from the Battery to Kings Bridge in the cars and are not likely to be

offended or endangered by that habit of spitting. I think the reform that has taken place in the city of New York in that one respect will extend, if it has not already done so, throughout the State.

Now, why am I here as president of the State Charities Aid Association? That association was organized some thirty-six years ago for the purpose, as its name implies, of aiding the administration of public charity in the State of New York. It was for the purpose of giving such aid as it could to the representatives of the State government and the localities in the various institutions of public charity throughout the State. Perhaps you hardly realize what an army of people are gathered in those institutions of charity in this one State. I believe they now number over 100,000 people, and they are maintained by the public at an expense exceeding \$20,000,000.

Well, now, everything that tends to reduce that tremendous burden upon the State,—everything that tends to the mitigation of the evils which result in sending persons to those institutions, tends very greatly to the benefit of the community. It is for such effort that this association of which I am president, organized this meeting and is to organize similar meetings throughout the State, and has started this campaign against tuberculosis. One thing the State Charities Aid Association did some eighteen years ago, which I believe you all know something about; that is to say it rescued all the dependent insane in this State from the alms houses and county houses where they were living degraded lives with criminals and with paupers. It secured their transfer to the care of the State itself by which they are now maintained in dignity, and in comfort, under expert medical care, very much to their own betterment and to the improvement of the morals of the whole State.

Now, in looking about us, as our visitors made their visits to these various institutions of charity and made their reports to us, we naturally have been solicitous to know what were the causes that led to this great accumulation of dependent people in these various institutions. It has been forced upon our attention that this very evil of tuberculosis, of consumption, responsible as it is, I believe, for one-tenth of all the deaths in this State, has contributed, and is contributing, very largely to the filling of these institutions. When the fact is known that something like 15,000 deaths occur annually in the State of New York from

this one cause, it is high time that the people of the State of New York were aroused to the evil that confronts them.

What family is there in this State, I almost might say what family is there in this country that has not sooner or later suffered from the ravages of this fell disease? Now, we have awakened to the fact which twenty-five years ago was hardly suspected, that it is a disease that in a very considerable measure is curable, and in a still greater measure is preventable. And it is for the purpose of awakening the attention of the people of this region to the dangers that surround them in this particular, to the means by which its ravages may be prevented, and to the still more important means to the individual, when an individual is attacked, by which he may be cured, that the State Charities Aid Association has thought it worth while to start this movement. Its purpose and plans are to gather great authorities, who will go from county to county and from city to city to instruct the people and set on foot the necessary local measures for fighting this formidable enemy. We have already held a series of meetings in Utica and in Rome, and in Troy. In each of these cities strong local committees have been formed and very active measures have been taken for the organization and development of plans which we hope will lead probably to the prevention of half of the mischief that comes from this source. We hope that the city of Albany for itself and the districts that immediately surround it will follow the example that has been set by its two sister cities to the West and to the North and take this serious matter in hand; and it is to aid that purpose that those distinguished gentlemen whom I shall now introduce to you have been called and have kindly consented to come here to-night.

First and foremost I shall call upon one who needs no introduction to the people of Albany, or to the people of New York, and upon whom the entire nation has set their eyes.

GOVERNOR CHARLES E. HUGHES:

Mr. President, Ladies and Gentlemen: This large meeting is significant of the deep interest that is being taken in a subject too long neglected, the public health. We are indebted to the State Charities Aid Association that, throughout the State, it is organizing meetings and conducting what is properly termed a campaign for the purpose of exterminating this great plague of tuberculosis. We are indebted to the distinguished president of

that association for giving this meeting the opportunity of greeting him, foremost in so many good works, and ready in these, I may say, the happiest years of his life, to give stimulus and inspiration to public undertakings of first importance. (Applause.)

The fact that we are here and that I am called as Governor of the State to take part in a meeting organized by the State Charities Aid Association, suggests to me the preliminary observation that it is remarkable what a vast amount of effort is put forth in this State to see that officials do their duty. We have first a great variety of charitable institutions with their superintendents and other officials and then we have boards of managers having the supervision of the institution to see that those officers attend properly to their business; and then we have the State Board of Charities supervising all those boards of managers and all these officers, to make sure that the work is properly carried on; and then comes the State Charities Aid Association, an unofficial body, which takes upon itself the duty of seeing that the State Board of Charities and the boards of managers and the officers under them, attend properly to the charitable work of the State; and then finally the great public comes in with its energy, to see that the State Charities Aid Association spends properly the money that is contributed for this noble purpose.

There is another preliminary observation that occurs to me and that is that it is a matter for congratulation when you can aim the State gun at a great evil, knowing that with a proper sight you can make a bull's eye. It is not so easy as might be supposed to define the evils that afflict the body politic and one of the first necessities is to make an accurate definition and then provide a remedy that fits the abuse, but here we know what the evil is. It is said, and those that come after me are far better qualified to speak upon that subject, that we know what to do, and apparently know about all that is needed for the purpose of practically wiping out this great scourge of mankind. What we need is intelligent effort, determination, and willingness to take the steps that may be pointed out by those familiar with this particular subject. We have already assured to us the beneficent co-operation of private effort and of public officials. There should be a further quickening of those who are charged with official responsibility and also of those who by special training and experience, are able to suggest and apply the particular remedies to which this disease must inevitably succumb.

Later in the evening, I understand, we shall hear from a number of representatives of the medical profession. I find when I come in contact with doctors that they spend most of their time making fun of lawyers, and nothing is so intensely humorous to me as to see lawyers and doctors exchange compliments with regard to the effects of their respective professions. What lawyers say about doctors may not, as Mr. Dooley says, be fit to repeat (laughter); but I would say this on the authority of a distinguished expert, a man of first rank in the medical profession of this State, that what is most needed in connection with the campaign against tuberculosis is capacity for accurate diagnosis of the disease in its earliest stages (applause). While we as citizens of the State are desirous that everything should be done through private organization and through the wise expenditure of public moneys, to put a stop to this evil, we have a right to call upon those who have the opportunity of expert training, to provide special studies and courses of studies, so that the great profession of medicine will itself be able to cope with this disease,—not with the later and incurable stages, but by proper diagnosis at the start, upon which all schemes for segregation and all schemes for prevention and isolation of the disease must depend. This is a matter to which the medical profession should give its most serious attention; and if I have spoken too freely on the subject, or if doctors who come after me should challenge any of my statements, I can only plead one of their most distinguished members as authority for what I have said.

But we must go beyond that. We have got to stimulate our local officials to an appreciation of what is within their power, particularly our local boards of health. I am a great believer in local government, and I believe if the citizens of each community would stir around and insist upon the enforcement of laws in their community and the enactment of just regulations, particularly in regard to the matter of public health, we would have such an agreeable change in the complexion of our public affairs that it would seem as if we had entered upon a new era. And in this particular matter, by the dissemination of correct information, by careful watchfulness to secure a report of every case that may exist, by insisting upon compliance with necessary regulations, our local boards of health may perform a very important function; and upon them, next to the diagnosis of the physician, will depend largely the success of the campaign. When it comes to the ac-

tion of the State authorities, of course they must exercise supervision over local officials and be ready to prescribe wherever necessary the regulations which should be adopted for proper efficiency in particular communities.

When it comes to the question of all the State should do apart from the equipment of its State Commissioner of Health, with proper means to carry on his work of supervision, I confess it presents a very difficult question. We have to-day in this State an important institution for the treatment of incipient pulmonary tuberculosis. It is doing an admirable work. I think I mistake not in saying that it appears that of the incipient cases something over eighty per cent. have been found curable; eighty per cent. of the cases that are properly defined and prescribed for treatment in the early stages of the disease may be rescued.

We may look at this purely from a humane standpoint and think of the amount of suffering, and think of the sorrow that enters into the homes of our people under this terrible scourge, or we may look at it solely from an economic standpoint and think of the waste of productive efficiency. Think of the loss to the State, to say nothing of the imposition of the extra burden upon the State, caused by the dependent cases of which the President has spoken. But whether we regard it from either standpoint, or as we should, look at it from both standpoints, the State certainly has here a most important duty to perform. That institution at Raybrook must be brought to the highest degree of efficiency that is attainable, and for the purpose for which that institution was devised. It is entirely proper also that the State Commissioner of Health should be provided with means so that there may be a spreading of necessary information by providing for acquaintance with necessary regulations; so that, under the State, there may go forth emissaries with proper information, with proper instructions, to the various communities, so that there may be a centre for the whole work of this campaign. But my friends, nothing that the State may do in this matter, or that the local authorities may see fit to attempt, will amount to very much if every effort is not backed by public sentiment which demands that to the fullest extent this evil shall be wiped out. If we had, through the misfortune of war, or the sudden rise of pestilence, or through some awful calamity, the destruction of life that annually takes place on account of the spread of this disease, we should be appalled, mass meetings would be held in every community, and demand would be made that the most urgent meas-

ures should be adopted. It is only because we are accustomed to this waste of life and are prone to think that it is one of the dispensations of Providence, that we go on about our business little thinking of the preventive measures that are possible. If the people of the State want to put a stop to tuberculosis, they can insist upon it; and their representatives will go to the fullest extent of their authority; but so long as the sentiment of the State protests against any interference for the purpose of securing the knowledge of the cases that is requisite to proper regulations, obedience to necessary rules, and everything that is essential to a comprehensive effort for the purpose of wiping out this plague, so long we shall have sporadic efforts, successful to a degree, but nothing like that concerted effort which is necessary to put an end to it altogether.

MR. CHOATE:

I think we owe a debt of gratitude to those who are spending their time bringing this subject home to our hearts and to our consciences and if we shall as citizens demand that this work shall go on to a successful conclusion and that the representatives of the people in official capacity shall do their best, the time should come, in years not so far distant, when this blight upon our civilization, so far as it may be disposed of by the action of our Empire State, may be removed. It has been said very truly that the Governor and the other officials of the State were being observed to see whether they are doing their duty thoroughly and according to the real American sentiment, and that reminds me of what happened in London when the Consul-General was sitting in his office and an American, very zealous of American honor, drove up with his four-wheeler with his family inside and baggage on top just freshly arrived from the steamer. He made his visit to the Consul-General and tried to make himself very agreeable and after ordinary conversation the Consul said to his visitor: "Well, sir, what can I do for you?" "You can do nothing for me, sir. I merely called to see whether my Consul was at his post."

Now, I will ask Mr. Kingsbury to read a letter of regret from a distinguished gentlemen whom we could not induce to be present here to-night because of his engagements elsewhere, the President of the United States, who has always had, whether as citizen, as Governor, or as President, the health and the happiness of the people of this great State, closely at heart.

Mr. Kingsbury reads the following letter:

WHITE HOUSE, *January 18, 1908.*

My Dear Mr. Folks: I have your letter of the 17th inst. I wish I could be with you. As I cannot be present, permit me as an old friend and member of the Association and former Governor of the State and a very earnest sympathizer with your practical work for social betterment to tender to the State Charities Aid Association, through you, the assurance of my interest, sympathy and approval in the work they are undertaking to organize, through local effort, associations for the prevention of tuberculosis in the State of New York outside of New York City. Such effort is peculiarly necessary and I earnestly hope for its success.

Sincerely yours,

THEODORE ROOSEVELT.

MR. CHOATE:

I now have the pleasure of presenting Lieutenant-Governor Chanler. You know how much he has already done for preserving and promoting the population of Albany. He takes great interest in the welfare of the families of his district and I know that he also has the health and happiness of the people of this State very greatly at heart. I am sure he will lend us a good word on this occasion.

HON. LEWIS STUYVESANT CHANLER:

(Lieutenant-Governor of the State of New York)

Mr. President, Ladies and Gentlemen.—I think you will all agree with me that the presence of this vast audience here to-night means that the people of this State are taking an active and wish to take an intelligent interest in the question to be discussed to-night, and therefore, the best evidence which I can give to you of my honest and real sympathy with this movement is not by making a speech to you, which will prevent you from learning from those who know, but by simply saying that I deem it a great honor to be here to-night and to take any part however brief in a movement such as this, which has as its object the destruction of one of the greatest enemies of humanity, which has as its object the furtherance of a scheme which will result in the amelioration of mankind.

MR. CHOATE:

I have now the honor of presenting to you the Honorable Eugene H. Porter, State Commissioner of Health, for the last three years. His administration has been energetic and the department has developed under his charge. During the last two years it has taken up the subject of tuberculosis actively and has established a traveling tuberculosis exhibit which is now to be seen in the vestibule of this hall, and he, I am sure, will give us a great deal of instruction upon our duties in this matter.

EUGENE H. PORTER, M. D.:

(State Commissioner of Health)

My friends, on facing such an audience as this, I feel like the stuttering witness who stuttered so badly that the judge said: "Heavens, can't you do any better than that?" "Yes," he said, "Judge, I am all right when I keep my mouth shut." For so many years we have known our distinguished chairman; so many times we have watched him fill positions of responsibility with credit and capacity, so many functions has he discharged for his country that it seems difficult this evening to imagine him in a new role. He is a versatile man, one who can play many parts, and so at the meeting of the Bar Association in New York last Friday night he developed into a sort of a kind of a doctor. He diagnosed the prevailing disease of this country to be over-legislation. He said we have 27,000 laws passed last year. He said it was a bad disease and he called in Dr. James Bryce of whom perhaps you have heard, from London, England, to assist him in the diagnosis, and they located the germ. And so my friends, with your permission and I hope, his acceptance, I propose by virtue of the authority vested in me as an official of the State to appoint our present Chairman as medical consulplenipotentiary, and in perpetuity to our State Department of Health.

Diagnosis is easy enough. It is not making a diagnosis that bothers a doctor, it is what to call the disease after you make the diagnosis. When the policeman brought his prisoner before the judge, he said, "Judge, this man has got three wives. He is guilty of bigotry." The judge said,

"How many wives did you say he had?" The policeman said, "Three." "Oh, no," the judge said, "he is not guilty of bigotry; that is trigonometry." (Laughter.)

Health may be said to be that particular blessing that we appreciate justly only after its loss. Those that are well see only dimly the possibility of personal illness and the sharp and costly lesson of a serious epidemic is too often quickly forgotten. But as public health is the greatest public blessing, one of the noblest and most imperative duties of citizenship is to preserve and secure its continuance.

The medicine of to-day is preventive medicine. The greatest problems now confronting us relate to the prevention of disease. There occurred in Massachusetts in 1890, 45,108 deaths from specific causes, and all but 1,814 or four per cent. were assigned by the physicians reporting them to the effect of the same disease. Disease, violence and old age seem to be the principal causes of death; disease causing about ninety-two per cent. And if disease is thus in reality, as it is apparently, the principal agent of death, it is obviously to the prevention of disease that sanitary science must address itself. So we speak of preventive medicine, meaning by that such action as shall prevent the ravages of disease. To the great majority death comes before old age, before the "lean and slippered pantaloons."

The principal function of sanitation and of the application of hygiene in general is the prevention of premature deaths. Sanitary science is the science of health. That branch of it dealing with the environment may be termed public sanitation, while that dealing with the individual may be termed personal sanitation. To sanitary science and the public health belong questions of infection by means of clothing made in sweaters' dens, the conveyance of disease germs of small-pox, scarlet fever or tuberculosis, the questions of polluted water, polluted milk and polluted air; questions concerning the origin, dangers and disposal of sewage; questions relating to dust and disease and the natural history of epidemics. The practice of sanitary science is founded, as applied science must always be founded, upon a basis of established truth. In actual dollars and cents the waste from preventible sickness and death is estimated to amount to more than the taxes paid for all purposes.

During last year 1,500,000 persons died and 4,200,000 were sick, involving the comfort and material prosperity of 5,000,000 homes and 25,000,000 people. Medical men not only believe that at least one-third of this was distinctly and practically preventible with existing knowledge, but that this might be extended to other diseases and the proportion constantly increased by broad scientific research and collective investigation. As an argument for peace we are told that 210,000 men died as a result of battle in both armies during the civil war. As an argument for better health laws and policies it may be said that 750,000 people died of tuberculosis in the United States during the past four years, and that at least half a million are constantly sick of it. The economic loss is estimated at \$240,000,000—\$330,000,000. Should not an effort be made to prevent this disease as well as typhoid fever, diphtheria, scarlet fever, cholera infantum, dysentery and other domestic pestilences?

Within the last ten years the department of agriculture has expended over \$40,000,000 in the investigation and extermination of Texas fever in cattle, cholera in hogs, pests in cotton, corn, potatoes, grapes, fruit and shade trees, warning farmers against frost and other proper and profitable activities affecting interests having recognized commercial value, while medical men and sanitariums have failed to obtain assistance in their unselfish war against pestilence affecting men, women and children. The State Charities Aid Association under whose auspices we are gathered this evening, is to be congratulated not only on the work it has done in the past, but upon the work it proposes to do in the immediate future. The great work in the past has been to organize and correlate the forces of benevolence along scientific lines. It has sought for the maximum efficiency with the minimum of waste. It has transformed the old charity, bewildered, confused, groping often in the dark, into an ordered, sanitary, uplifting and progressive movement concerning itself with the welfare of men and improvement of their opportunities, until its beneficent influence has been felt throughout the state, and its value fails of adequate measurement.

THE FUNCTION OF THE DEPARTMENT.

But in dealing with this most serious problem it may be well to distinguish as clearly as possible between that which should be undertaken by the state, and that which belongs to private charitable endeavor. The state is profoundly interested in the health of its people, considered as a whole; it concerns itself with the health of its cities, its towns, and its various communities. It studies existing conditions, both general and local, in order that it may improve the public health. The state constantly endeavors to protect itself against disease. It deals with communities rather than individuals. It has and can have no concern for the individual unless he becomes a menace to the health of the lives of others; then action is taken to protect the general health.

The various charitable organizations, both local and state, however, deal primarily with the individual. While they do not forget or ignore the requirements and needs of communities, the necessities of the individual are the chief concern; and it is through these private and beneficent efforts that a man or woman dragged down by misfortune, plunged into miserable poverty, destitute and despairing, threatened by deeper degradation is rescued by an enlightened benevolence from the evils of pauperism and pauperization and given an opportunity to begin anew the battle of life. Such work gives to the state citizens worth saving. It is the duty of the state to protect them from disease. And so such a meeting as this, sagacious in conception, successful in execution, with an audience filling all available space, representing the beauty, bravery and intelligence of Albany, addressed by eminent and expert speakers, with all its brilliance and enthusiasm, is yet evanescent in both its character and influence. This is a mere beginning. It tells a story with which you and I, in part at least are more or less familiar; it stimulates our interest and we hope that something will now be done. We must make deeper impress than that, not only on the sands of time, but on the minds and hearts of our fellow citizens throughout the state if we are to advance. We must follow up this meeting with steady, wisely directed, systematic and persistent efforts. And here in very large part at least, lies the immediate work before the Department of Health.

TUBERCULOSIS.

"And there shall be no end to this war." These words of scripture seem most appropriate to our present case.

Let us remember that notwithstanding the years that many of us here knew how to successfully fight tuberculosis, little has been done. The great body of our fellow citizens are still ignorant of and so indifferent to the dangers of consumption and how to combat it. It is not a thirty-day campaign—it is a war to endure for generations against ignorance and inefficiency.

In the state fifty thousand cases of tuberculosis yearly: 14,000 deaths. Think of it! Think of the misery, the anguish, the desolation left in the trail of the white plague. And in the silence that comes when there is heard "Ashes to ashes, earth to earth," shall there not be heard a voice asking us for an accounting?

For the death rate of tuberculosis is not decreasing; it is increasing. The disease is only relative, in proportion to the population. Consumption continues to cause one-tenth to one-eleventh of all deaths and its death rate rises and falls with the general death rate. The vast proportion of these deaths occur between the ages of twenty and forty, when productive power is at its highest. We cannot put in figures an estimate of the distress and suffering, but we may say that the wanton waste of precious lives is a loss of wealth to the state of at least \$70,000,000 annually. Let us remember that consumption is a preventable disease, that it is not at present prevented, nor is it likely to be unless we do something besides talk.

Believing that the prevention of tuberculosis is one of the most important and pressing questions immediately before the Department, it seemed advisable to obtain the aid and advice of men eminent and experienced in this field of work. It is with great pleasure that I am able to announce to you to-night that the following distinguished gentlemen have consented to act as an advisory board to the Department and give such aid in dealing with this difficult question as is possible: Dr. E. R. Baldwin, Saranac Lake; Dr. Thomas Darlington, Health Commissioner, New York City; Dr. Livingston Far-
rand, New York City; Homer Folks, A. M., New York City;

Dr. George W. Goler, Health Commissioner, Rochester; Dr. Willis G. Macdonald, Albany; Dr. Alfred Meyer, New York City; Dr. Veranus A. Moore, Cornell University, Ithaca; Dr. J. H. Pryor, Buffalo; Dr. W. H. Watson, Utica.

The work the Department sees right before it after consultation with its Advisory Board may be very briefly summarized as follows:

1. The completion of the State's Tuberculosis Exhibit. The one created last year because of lack of funds was sadly wanting, but so great has been the demand for it that it will virtually have to be reconstructed. I need not explain to this audience the need of such an exhibit.

2. The Empire State's Exhibit at the International Congress. You will remember perhaps, that in September of this year an International Congress on Tuberculosis will assemble at Washington, D. C. It will be undoubtedly the greatest and most representative gathering ever assembled in this country to consider matters affecting public health. It is imperative that this Empire State of ours be properly represented there by such a complete and comprehensive exhibit as shall conclusively demonstrate her living and active and leading interest in this work. But it will be impossible for the Health Department in pursuance of the instructions of Governor Hughes, to gather together the contributions of all the municipalities, of all institutions, and of all allied departments of the state government and co-ordinate into an harmonious whole unless some funds are supplied.

While the two items I have just mentioned are of great importance, yet the Advisory Board and the Department do not give them first place.

For the active work in the state which must be systematic, persistent and well conducted, it has been agreed that the first two steps might be these:

1. Registration and Notification.

There are several things the state might or could do but there is one thing it must—that is, to insist upon the registration of all cases of tuberculosis. It is absolutely essential that the location and distribution of these cases be known in order that proper measures may be taken for their instruction and relief. You cannot give aid to any consumptive until you

know where he is, nor can it be known what help he requires until the case is properly reported and the conditions described.

A bill will be introduced in the Legislature making mandatory registration and notification of all cases of tuberculosis throughout the state. The provisions of this bill will be worked out with great care and we hope and expect the active support of all who are genuinely interested in this work.

2. District Investigation.

The next and most important step that follows naturally after the one preceding is systematic and continuous supervision of the fight against tuberculosis.

The Department should investigate the conditions existing in any given part or parts of the state; should provide for the wide distribution of circulars, pamphlets and other literature bearing on the prevention of the disease; should enlist the press, the clergy, the school teachers, the Farmers' Institute, the Grange meetings and furnish them with literature and speakers; should instruct health officers and health boards as to their specific duties; should ascertain how the various towns and localities in the state were performing each its part and should do these things constantly and without ceasing. For all this must be done carefully, intelligently, accurately, patiently, thoroughly, over and over again if we may hope to succeed. This supervision of effort and dissemination of information in proper and wise ways for the prevention of tuberculosis will require some considerable amount of money.

APPROPRIATIONS.

Efficiency and appropriations—the union of affinities, the one a complement of the other—married by general consent—let no legislature put them asunder.

For it ought to be true, even if it is not altogether so as yet, that no appropriation of public moneys should be made without a definite expectation of efficient and honest public service in return. To the question: What is the expense of a certain line of work? must be added the significant inquiry, what service has been rendered for that expense? But there can be no service without means; there can be only inadequate service with insufficient funds; there can be efficiency in its fullest sense when the appropriation is enough to meet actual needs.

The last Legislature increased the appropriation for our Department by almost \$42,000. The Governor allowed every increase asked for by the Department and stated that he did so in order to increase the efficiency. This increase of income has enabled the Department, for the first time, to begin lines of work that could not be undertaken before because of the expense.

But the appropriation does not as yet, by any means meet the requirements. The total amount of money available for the Department, exclusive of the Cancer Laboratory, is still less than \$100,000. We are still severely crippled in the amount allowed for Investigation, for the Division of Engineering and for the Division of Laboratory Work. I have no hesitation in stating that the efficiency of the Department is materially lessened and its administration hampered by lack of funds.

Pennsylvania for the two years beginning June 1, 1907, has appropriated for its Department of Health—after the payment of the annual salary of the Commissioner, \$10,000, and the salaries of numerous other officers, the sum of \$1,459,312—\$400,000 of which is for “the dissemination of knowledge relating to the prevention and cure of tuberculosis.” I may add that the appropriation made by Massachusetts also exceeds that of New York. All we want is enough to do thoroughly and well the work that lies before us.

CONCLUSION.

We must remember as a noted scientist said recently “As we march onward toward the true goal of existence, mankind will lose much of its liberty, but in return will gain a large measure of solidarity. The more exact and precise a science becomes, the less freedom we have to neglect its lessons. We know now that if we have learned how to prevent a disease we have gained a new duty—we must not shirk it—and we further know that the path lies straight before us.

In this war in which we are engaged let there be no wavering or faltering in the ranks.

On the night of July 2, 1863, after a bloody battle a council of war was convened by the commanding general. The corps commanders present expressed their views. Slocum, being

the ranking officer in the council, was the last to reply. He said: "Stay and fight it out." Slocum was not an orator, but no orator made a better speech. It was brief like Caesar's *veni, vidi, vici*, but it told the whole story. Stay and fight it out was the advice given by the council to General Meade, who was not satisfied with his position at Gettysburg. The army of the Potomac did stay and fight it out and the story gained is the last comment that can be made.

Let us enlisting for the war "STAY AND FIGHT IT OUT."

RESOLUTION.

At the meeting of the Tuberculosis Advisory Board held in the State Department of Health, Monday afternoon, January 27, at which were present Drs. W. G. Macdonald, Albany, N. Y.; J. H. Pryor, Buffalo, N. Y.; S. R. Baldwin, Saranac Lake, N. Y.; V. R. Moore, Ithaca, N. Y.; W. H. Watson, Utica, N. Y.; A. Meyer, New York City; G. W. Goler, Rochester, N. Y., and the Hon. Homer Folks, of New York City, the following resolutions were passed:

1. *Resolved*, That a bill be presented to the Legislature providing for the notification and registration of all cases of tuberculosis.

2. *Resolved*, That in the opinion of the Tuberculosis Advisory Board it is most important that adequate steps should be taken to prevent the importation of tuberculous cattle into the state.

3. *Resolved*, That the Legislature should be asked to place at the disposal of the State Department of Health adequate funds for the investigation of tuberculosis and for the taking of such measures as it may deem necessary for its suppression.

4. *Resolved*, That the secretary of the Tuberculosis Advisory Board draw up a preliminary report stating what has been done in New York State in connection with the tuberculosis problem; what has not been done and what can be done.

5. *Resolved*, That the Advisory Board strongly endorses the educational value of the state tuberculosis exhibition which is now being shown around the state and believes that it should be duplicated.

MR. CHOATE:

I now have the pleasure of introducing Mr. Martin E. McClary, of Malone, New York, another lawyer, turned doctor, for he has been president for several years of the Board of Managers of the New York State Hospital for Incipient Tuberculosis at Raybrook, near Saranac Lake. I am sure he will have something very interesting to tell us.

MR. MARTIN E. MCCLARY:

(President, Board of Managers, New York State Hospital for Tuberculosis)

Ladies and Gentlemen, Good People of Albany.—I am asked to say a word to you about the needs of New York State Hospital for the Treatment of Incipient Tuberculosis at Raybrook. It has a very long name and it is a long distance from our centers of population. I thought first that it would be impossible to repeat the name in the five minutes which has been allowed to me. Then I thought if I took thirty minutes to tell how much I thought of the chairman and forty-five more to tell what I thought of the Governor, that most of my time would be exhausted. I want to tell you just one word about Raybrook. Although it is a long way off, it is a short way to life and health for very many of our unfortunate citizens. Its needs are many, easily understood and readily found and granted; to my mind they stand in about this order. First, a better knowledge on the part of the people at large, of the purpose for which Raybrook was founded and is maintained. Elsewhere throughout the state, we have prepared and are maintaining homes where people may happily live until death gives them freedom. The fundamental idea of Raybrook is to give life and to give health to those who stand face to face with this dread disease, and yet upon whom its clutches have not been as yet riveted. The purpose of Raybrook is to save the lives of those whose lives can be saved. It is not a hospital for the victims. Elsewhere our people and our state must provide for such. Now the question is, can we fill Raybrook with those? Well, we have 150 now, and perhaps in the summer time we could take care of 200, and there are literally thousands that need Raybrook for what Raybrook can give them because it can give them life.

Now, remembering the five minutes, our second need is this: That God will put into the hearts of those who have the care of our poor in all the counties of our state enough of the

milk of human kindness that they will not weigh the five dollars required by the state from the county against the life of one of the least of these, His creatures.

The incipient has not yet become a county charge, and Raybrook is there to save him, and *his* from ever becoming such. Third, the next great need to my mind is a broader knowledge on the part of all our legislators as to the method of treatment at Raybrook, and what we require there. I could give you an extended list of what we need at Raybrook, but this is not the time nor the place. We need a superintendent's house. We need another house for employees. We need more tents, but they are coming. But most of all we need the prayers, the sympathy and the intelligent co-operation of those who love humanity, and who see in this dread disease a menace to the happiness and prosperity of our people. By being here to-night, the good people of Albany are answering in a way that question that was asked 2,000 years ago, "Who *is* my neighbor?"

MR. CHOATE:

Now, ladies and gentlemen, you will have an opportunity of sitting at the feet of Gamaliel, for I have the honor of presenting to you Dr. William H. Welch, who is the Professor of Pathology in Johns Hopkins University, and the acknowledged leader of scientific medicine in America. He is President of the Board of Trustees of the Rockefeller Institute for Medical Research, and was president last year of the American Society for the Advancement of Science.

It is a very great compliment to this city and to this company that he has come all the way from Baltimore to enlighten us as to what we may reasonably hope to accomplish in the campaign we have undertaken. (Applause.)

PROF. WILLIAM H. WELCH, M. D., LL. D.,

(Johns Hopkins University, Baltimore, Md., President Board of Trustees, Rockefeller Institute of Medical Research)

WHAT MAY BE EXPECTED FROM MORE EFFECTIVE APPLICATION OF
PREVENTIVE MEASURES AGAINST TUBERCULOSIS

Mr. Chairman, Ladies and Gentlemen.—To those who have so long pleaded the cause of public health in this country, often, it seemed, to deaf ears, this occasion must be a source of great encouragement and inspiration. The interest mani-

fested by this large audience, the presence as presiding officer of one of our most distinguished citizens, the stirring addresses of the Governor and other speakers, and the participation of so many eminent in public life, in philanthropic effort, and in medicine and sanitation, are indications of a great awakening in behalf of the health of the people of this State.

This awakening has come mainly through interest in that disease which may truly be called "the disease of the people." No other disease merits this designation in equal measure with tuberculosis, which carries off one third of those who die at a time of life which should be that of the greatest productive energy. The people have recognized their true foe in tuberculosis, and are stirring to the combat throughout the civilized world.

It may be asked why it is necessary to arouse the public regarding the prevention of tuberculosis more than concerning other preventable diseases. Many triumphs of preventive medicine have been achieved without this great upheaval of popular interest. The necessity of enlisting the active interest and support of the public in the campaign against tuberculosis is due not solely to the extent of the ravages of this disease, enormous as these are, but to the fact that the prevention of tuberculosis is a social and economical problem as well as a medical one, and that therefore not only medical and sanitary measures but also other forces of the community—legislative, administrative, philanthropic, educational—must co-operate in the struggle. An important aspect of the crusade against this disease is that success in the struggle signifies also social betterment, enlightenment in ways of healthy living and working and intelligent interest and education in individual and public hygiene in general.

The thought which comes first to my mind, as I have witnessed the enthusiasm and interest manifested by this large meeting, is how such energies and forces as have been aroused and are ready to be moved can be so directed and applied as to secure in the most effective manner the best results. It is of fundamental importance to secure the co-operation and co-ordination of all the necessary agencies and to proceed along well defined, systematic lines.

Since the discovery of the tubercle bacillus by Koch in 1882 it has been known that tuberculosis is a preventable disease,

and experience has demonstrated that in the initial stage it is curable in the majority of cases. Without the aid of experimentation upon animals this greatest discovery in the domain of bacteriology could not have been made.

It is in my judgment a conservative statement that at least one-half of the existing sickness and mortality from tuberculosis could be prevented within the next two decades by the application of rational and entirely practicable measures, and I believe that we can look forward to a much larger success. You can be assured that the expenditure of money and of well directed energy in this cause will lead to a very considerable saving of human life, and that in no other direction will money expended for sanitary reform yield equally important results to the community.

The essential elements in the solution of the problem of prevention of tuberculosis are clear understanding of the modes of conveyance of the disease, well considered, practicable measures of prevention based upon this knowledge, the application of these preventive measures under the direction of skilled sanitary officers, and adequate resources for their application.

The justification for the statement that the death-rate from tuberculosis may be cut in two is based upon the fact that the saving knowledge which we possess regarding this disease is at present only most inadequately and imperfectly applied in prevention, and that even this inadequate application has brought about a notable decline in the mortality from tuberculosis in many communities, and, it would appear, precisely in those places where preventive measures have been most effectively employed.

In Prussia the death-rate from tuberculosis has diminished about forty per cent. in the last twenty years. In Sweden there has been a similar reduction. Particularly significant is a like diminution in New York city, which offers unusually difficult problems in consequence of the tenement house conditions and the resulting density of the population and of certain other unfavorable factors. The Health Department of New York city, largely through the admirable work of Dr. Biggs, has achieved a triumph in this regard which has attracted the attention of sanitarians throughout the world. In England the decline in the death-rate from tuberculosis began

long before the discovery of the tubercle bacillus and has continued to the present time, but in this country there have been throughout this period special hospitals for consumptives and intelligent public sanitation.

Permit me to indicate very briefly what I conceive to be the more important agencies necessary for the control of tuberculosis.

1. A leading rôle in the campaign against any infectious disease is the notification of the disease to the health authorities, and in my judgment this should be recognized as an essential feature in the administrative control of tuberculosis. New York city deserves the credit of having demonstrated the feasibility and the practical benefits of the notification and registration of tuberculosis. In the light of this actual experience of the workings of the system little weight can be given to most of the arguments which have been and are still urged against its adoption, and I am pleased to hear from Dr. Porter that an effort is to be made to secure a state law along similar lines.

2. Mr. Choate, in his opening remarks, touched upon the importance of early diagnosis of tuberculosis. An important aid to this end, which is indeed of the utmost significance, is the establishment of laboratories maintained by municipal and State boards of health and freely at the service of physicians.

There are at least three classes of institutions which are of primary importance.

3. First in importance for the treatment of tuberculosis are sanatoria. This country owes a great debt to Dr. Trudeau, the pioneer in the establishment of sanatoria for tuberculosis in America and the leader in the crusade against this disease. While I consider that hospitals for advanced cases of tuberculosis are more important than sanatoria in the prevention of the spread of tuberculosis, still the latter institutions are also valuable for this purpose in accomplishing the arrest of the disease in those who would otherwise become possible sources of infection and especially in their educational influence extending far beyond the actual inmates. Here the great lesson is most effectively taught that by proper disposal of his expectoration and certain simple precautions the consumptive

may render himself entirely harmless as a source of infection to others.

In Germany to-day some twenty-five thousand patients in the early stages of tuberculosis are treated in sanatoria, a number equal to about one-fourth of the total deaths from this disease. Sanatoria on such a scale and frequented by patients to such an extent must rank among important preventive agencies.

4. Hospitals for the isolation of advanced cases of tuberculosis are given by Koch the first position among the agencies for checking the spread of the disease, and their importance is especially emphasized also by Dr. Biggs. These hospitals, unlike the sanatoria, receive the patients who are most dangerous to others and are responsible largely for the spread of the disease. Every populous community should be provided with one or more hospitals for patients in the advanced stages of tuberculosis, and every effort should be made to secure the transfer to the hospital of such patients, when they cannot be suitably cared for in their homes. Much more should be done than is now customary to make these hospitals attractive to such patients and their friends. One of the greatest difficulties in the crusade against tuberculosis at the present time, especially in this country, is the utterly inadequate provision for these hospitals. There is also difficulty, even where the hospitals exist, in inducing patients to enter them in sufficient numbers.

Under present conditions only a relatively small number, in this country not more than four per cent. at best, of tuberculous patients are cared for either in sanatoria or in hospitals. It is evident that through some other agency the largest number of consumptives must be reached. This is now being accomplished more and more effectively and in constantly increasing measure by the special tuberculosis dispensary. This is or should be an institution in many respects different from what is ordinarily understood by a dispensary. The German conception of this institution is expressed by the designation "information and aid station." The French idea is also that of an anti-tuberculosis bureau, forming a centre for the enlightenment of the public, for hygienic education, for the discovery of centres of tuberculous infection in households and workshops, for the instruction of patients in the

precautions necessary to prevent spread of the disease, for the improvement of living and working conditions, for medical care and kindred purposes. Visiting nurses and health inspectors constitute an essential part of the machinery of these tuberculosis dispensaries, which we must rank among the most important and effective agencies in the campaign.

Time forbids more than the mere mention of such recognized preventive measures as the disinfection of rooms vacated by consumptives through death or removal, enforcement of laws and regulations against expectoration in public places, protection of food, especially the milk supply, by suitable laws and their enforcement, sanitary inspection of factories, workshops, lodging houses, etc., destruction of tuberculous sputum and the education of consumptives, of the public and of school children in the elementary facts regarding the origin and spread of tuberculosis, and in ways of healthful living.

Scarcely less important than measures, like the foregoing, specifically directed against tuberculosis, are all conditions which make for the improvement of the dwellings and working places of the poorer classes. Air, light and food are as important for the prevention as for the cure of tuberculosis. Parks, playgrounds, in a word all measures to improve the health of the people, operate in a very direct way in increasing resistance to tuberculosis and in lessening chances of infection. There is reason to believe that no small part in the diminution of the amount of tuberculosis has been due to improvement in the general conditions of living.

The specific measures against tuberculosis must be carried out by the health officials, and especial emphasis must be placed upon the need of a larger number of well-trained sanitary experts in the work of our State and municipal boards of health and of larger resources at their disposal. Upon them must fall the main part of the work in the campaign against tuberculosis. With some notable exceptions our city and State boards of health are far behind in efficiency similar boards in England and Germany. The need of special training for the successful conduct of public health work is most inadequately appreciated by the general public and, it is to be feared, even by the medical profession in this country.

Progress in the struggle against tuberculosis is largely a question of ways and means. I have enumerated some of the

more important agencies needed for the control of this disease not with the intention of outlining a programme, but to indicate how inadequately at present preventive measures are in operation and thereby to substantiate the opinion that wider and more effective application of these measures would yield correspondingly better results. Much larger funds are needed than are now available, but it can be confidently predicted that the returns in the saving of human life and in increase of happiness and of productiveness will be out of all proportion to the pecuniary outlay.

What New York accomplishes in this world-wide movement against tuberculosis and the way she accomplishes it have a significance not limited by the boundaries of this Empire State. An especial incentive to prompt action is the opportunity which will be presented next September of demonstrating to the world at the International Congress of Tuberculosis what this State has done and is doing in the most stupendous struggle against disease ever undertaken by man.

MR. CHOATE:

Ladies and gentlemen, I am sure that not only this audience but all the people of this State, to whom I hope it will be reported, are under a debt of vast obligation to Dr. Welch for the very impressive and valuable address that he has delivered. I have now the honor of introducing the Hon. James W. Wadsworth, speaker of the Assembly, who will say a good word to us, I am sure.

HON. JAMES W. WADSWORTH:

(Speaker of the Assembly)

Mr. Chairman, Ladies and Gentlemen.—You must know now, and if you don't now you will very soon, that I am a layman when it comes to a discussion of this subject, and that anything I may say to-night will bear very little weight as compared to the addresses which have already been delivered by those who have made a careful study of this great problem. As a layman, I cannot pretend to discuss this subject from a scientific standpoint, nor can I advocate in detail ways and means by which this terrible disease must be combatted, but even though a layman I feel that I appreciate the enormous

loss in lives and property which this disease involves, and the absolute necessity of immediate and efficient measures of prevention. I desire to congratulate the officers of the State Charities Aid Association, and the other persons interested in this movement for adopting these means of bringing this matter to the public's attention. It is by such meetings as this, held in various localities throughout the state, great and small, and by means of just such addresses which have been made here to-night by those who know whereof they speak that the public can be aroused and the individual citizen educated.

I think it is proper for me to say that I probably know more about the conditions which exist in the country districts than I do about those which exist in the greater cities. So far as the fight against tuberculosis in human beings is concerned, the people living in the country districts start in under rather the more favorable conditions. I am informed by consultation with some statistics that tuberculosis in the human species is considerably less prevalent in the country districts and in the smaller cities and villages, than it is in the greater cities—a condition which should not cause surprise when one considers the greater opportunities for healthy living. And yet we must not rest content with simply arousing public sentiment and educating local authorities and the citizens in the greater centers of population, and at the same time permitting the disease to increase in the country districts, where it has already made great inroads.

I firmly believe in the value of sane agitation and education on this subject. Its value is demonstrated by the fact that within the last five or six years the rate of deaths from tuberculosis in the greater cities has considerably decreased, while the rate of deaths from tuberculosis in the country districts, where practically no attention has been paid to the problem has practically stood still.

I firmly believe that the methods and the policy being instituted by this organization if applied to the country districts will result in an even more favorable showing than has been brought out in the large cities.

Now, we in the country districts, have another problem to face which is closely related to this one; a problem in which every city dweller must take a great interest, and that is the

problem presented by bovine tuberculosis. It has been definitely determined, so I am told, that this disease can be transmitted to human beings from the milk and butter and cheese coming from affected dairy herds, and recent investigations have shown that bovine tuberculosis is prevalent to a large extent in the cattle throughout this state.

In my judgment it is going to be fully as difficult to combat this disease as it is to combat tuberculosis in the human system. It is more insidious among animals, and I believe more infectious. One animal can transmit the disease to a whole herd if they are shut up together day after day in a poorly ventilated barn or stable; and the perplexing feature of the problem is that until the disease has reached an advanced stage, no outward sign is apparent, and we have recourse to the comparatively clumsy tuberculin test before we can reach an accurate and reliable diagnosis. The finances of the state, the dairy interests themselves and the consumers of milk could not possibly stand the immediate application of the tuberculin test to every dairy animal in the state, and the immediate slaughter of every animal found infected. The state system of testing dairy animals must be enlarged, it must be improved and it must be systematized and carried on as rigorously, as vigorously and as thoroughly as our financial limitations and the best interests of all concerned will permit. And there is not the slightest doubt that the state acting for itself, can accomplish a great deal toward eliminating it from the dairy herds. But the success to be met in this movement will not be, in my judgment, attained so much by the ability of the state to test and slaughter a given number of animals in any one year, as it will be helped and made possible by the example which the state can set in its crusade to the individual owner of the dairy herds; for when it becomes apparent—and it is becoming so to-day—that the prevalence of tuberculosis in a herd will ultimately ruin it and touch the owner's pocket, when he realizes that if he allows it to stay there it will ruin his business, and that it constitutes a menace to the health of his neighbors, and is liable to drive him into bankruptcy, my judgment is that the individual owner will do all in his power to clean up his herd and his stable and eliminate that which threatens his prosperity.

Referring once more to the principal topic of the evening, I want to say that I note with pleasure that the State Charities Aid Association is commencing this movement in this state by arousing public sentiment in the localities, rather than by attempting to persuade the Legislature and the state government to take this up as a state governmental function.

Every city and every village and every community lives under conditions, some of which are peculiar to that particular city, village or community. There are differences in climate; there are differences in the industries which chiefly prevail in given communities; there are differences in the physical and geographical surroundings and the character and the distribution of its population. It would be well nigh impossible, and at best, it would be exceedingly difficult for the state government to exercise mandatory control over the whole state in the matter of health regulation; and many of us believe that any attempt on the part of the state central government to exercise such control is not a proper function of the government. There is not a question in anybody's mind that the State Department of Health can be of enormous value in disseminating information, educating local authorities and the people to an appreciation of the seriousness of the situation; and in promulgating what might be considered the standards of prevention. But after all is said and done, the real success in this movement lies in the local officer, the local authority, who knows the local conditions, and who is constantly under the observations of the community he is employed to protect.

It may be said of this matter, as it may be said in most matters affecting government, that the closer we keep the government to the people, the more surely will the people control it and the more responsible will be the local officer. (Applause.)

MR. CHOATE:

Ladies and gentlemen, you will now have the pleasure of hearing Senator Armstrong, of Rochester. He is chairman of the finance committee, he holds the purse of the State treasury, and nothing can be procured from that quarter unless he has been convinced, and I hope he will show us in a few words that he has been.

HON. WILLIAM W. ARMSTRONG:

(Chairman State Senate Finance Committee)

Ladies and Gentlemen.—Up in Rochester where I live a witness in a lawsuit was asked the other day where he first met his wife, and he said, “Well, I didn’t really meet her, she sort of overtook me.” While I was listening to Dr. Porter’s remarks to-night, I felt as if we had not met the tuberculosis question, but it had sort of overtaken us. I did not agree exactly with the unction, nor with the ominous pause which followed the statement of comparative figures of appropriation between Pennsylvania and New York, because it made me feel as if I had been invited here as the usual horrible example.

The Legislature is not unwilling and has not been unwilling to do its duty. The state has touched this tuberculosis question so far, and from what I have heard, is apt to touch it in the future only, in two respects. First, its sanatoria, of which Raybrook is its type at present. Prof. Welch says that important as they are, they are but small factors in the solution of the question, and the Legislature agrees with him. It organized the Raybrook institution a few years ago as an experiment for educational purposes, so that those suffering from incipient tuberculosis might be sent there and taught to take care of themselves and returned home, not cured, but possessed of information with which they could not only effect their own cure but teach others, if they would, and so it is largely an educational institution, and I think it has been operated largely as an educational institution and with considerable success. But its capacity has never yet been really tested, and it is yet simply in the experimental stage. The Legislature has kept close watch of the Raybrook institution, as President McClary can testify, if he would, and is ready to support that institution and to erect others if it is necessary. But this is only one of the two points at which the state touches the question.

The other is the State Department of Health. The State Department of Health has received more indulgent treatment from the Legislature than any other department of the state. Last year it received a greater proportional increase in its appropriation than any other state department. Under the very efficient management of Dr. Porter the State Department

of Health has been given increased appropriations and I believe he has organized the local boards of health into more efficient and systematic bodies than any of his predecessors have done. And it goes without saying that well organized bodies of this character are going to be important factors in the solution of this question. Now those are the two points upon which the state touches this question. The Legislature realizes that the prevention of tuberculosis cannot be accomplished by dumping into the state bucketfuls of money. It demands intelligent, well directed effort and this great organization is well equipped in that direction. The Legislature must be deemed to be only a co-operating agency in a great movement like this, and I mistake the temper of the Legislature if it does not to the fullest extent fulfill that duty. But it must be realized that the Legislature is only a co-operative agency and that brains and intelligent effort are worth more to this propaganda in carrying on this campaign than all the money that the state can contribute to it. If money shall be necessary in great quantity it will only be after brains and well directed effort have mapped out the path in which that money can be economically and successfully expended. If nothing more came from the effort in this city than this meeting to-night where the importance of this subject has been brought to the attention of so many men and women as are here to-night and the fact that this disease is capable of prevention and cure, who will say that the effort has been in vain. I only desire to assure the ladies and gentlemen engaged in this movement and those who are here to-night that the Legislature does not believe that it has failed heretofore in its generous support of the State Health Department which has so much to do with this question, nor will it fail in the future. And if our expenses must be curtailed in other directions, I hope the Legislature will never find it necessary to curtail them in the matter of the prevention of disease and the promotion of public health. I am glad to be here to-night, although I have contributed very little to the success of the meeting. I am proud to be associated with the men and women who are engaged in this movement, and I am anxious to have a meeting of this kind organized for the city of Rochester, for I am convinced that we need it in Rochester just as much as it has been needed in Albany.

MR. CHOATE:

I will take just five minutes more of your time for two of the chief officers of our State Charities Aid Association who are at the bottom of this movement and are entitled to more of the credit for it than anybody else. To borrow the words of Senator Armstrong, they are themselves the whole "propaganda" of the whole movement. I mean Mr. Canfield, our Vice-President, and Mr. Folks, our Secretary. I will ask Mr. Canfield to step forward.

MR. GEORGE F. CANFIELD:

(Chairman, Committee on Prevention of Tuberculosis, State Charities Aid Association)

Ladies and Gentlemen.—As Chairman of the Committee on Tuberculosis of the State Charities Aid Association, I am very glad to have the opportunity to take part in this meeting; but at this hour I wish to take a very small part.

Great leaders in a democracy have been guided and sustained by an abiding faith in the people. The State Charities Aid Association throughout its long career of public usefulness has been guided and sustained by a sublimer and perhaps a rarer faith—a faith in public officials. There is a significance in our name. We are the State Charities *Aid* Association, not an *anti*-association, but an *aid* association, and our methods and our achievements have justified our name. Founded more than thirty years ago, we adopted a policy, commended and illumined in recent times by our illustrious Governor, the policy, namely, of patiently investigating conditions and then taking conservative action based upon the knowledge so acquired. Our conservative action has consisted largely in co-operative work, in co-operating with legislative bodies and with administrative officials. Every right-minded official, according to our belief, and most officials are right-minded, welcomes the co-operation of disinterested citizens, provided their real object is the betterment of civic conditions and not the betterment of their own conditions and the gaining of a little brief notoriety.

Such being our policy and our belief, this problem of tuberculosis appeals to us with a peculiar force, and I feel that our Association is peculiarly fitted to undertake the task which it has assumed. What is needed, as has already been pointed out, is simply a patient investigation of conditions, the educa-

tion of ourselves and the community at large, and the enlightened and effective action, legislative and administrative, which results from such investigation and education.

We began our work in the city of Utica. As many of you may know, the State Charities Aid Association, represented by a central board of managers in the city of New York, has an organization throughout the state, through its local county committees. We began our work in the city of Utica through a sub-committee appointed by our local Oneida County Committee and we have already accomplished many specific results. A definite programme of constructive work has been adopted by this sub-committee, and considerable progress has been made in studying local conditions, in ascertaining the location or what might be called the habitat of the disease, and the means needed for the proper care and treatment of it. The interest of the medical profession has been aroused and its active co-operation has already been secured. This will lead to the more general notification and registration of tuberculosis cases—which is one of the first and most important steps. The Utica Dispensary is to establish a Tuberculosis Department, to which a visiting nurse will be attached. She will visit the homes of the poor where the disease has been located, and will bring to them a better knowledge of the disease and of the methods of treatment, and will see to it that these methods are applied, so far as practicable. The city is also to employ a bacteriologist, who will, without charge, make examinations of the sputum that may be sent to him by any physician. This will lead to a more general and a more prompt discovery of the tuberculosis cases, and the value of this lies in the importance of discovering the disease in its incipient stages. Arrangements are under consideration for the proper segregation in separate pavilions of the tuberculosis patients in the Oneida County Almshouse, and for the construction of separate pavilions on the grounds of the Utica General Hospital, where the more advanced cases may receive proper treatment. General educational work has been done by means of public meetings, the tuberculosis exhibit of the State Department of Health, by the distribution of literature, and by articles in the press.

Originally we had supposed that all our activities for a considerable period of time would be limited to one city, and

that, after having shown what could be accomplished there by steady and enlightened work, we should proceed on the basis of such results as an object lesson to other communities. But the interest in our work has grown so rapidly, that we have already entered upon similar plans of action and laid the foundations for similar results in the cities of Rome and Troy, and finally we have come here to the city of Albany in the confident expectation that a vigorous campaign will be begun here with the same promise of success as elsewhere.

As Dr. Welch has told you, there is a very general agreement among the medical profession as to the nature of this disease and as to the proper care and treatment of it; and there is a very general agreement that with proper treatment, at least, if it is begun in the incipient stages, the disease is largely curable. All that is needed, therefore, for the successful prosecution of the campaign which we inaugurate to-night is a more general diffusion among the people of the knowledge already possessed by mankind, and the more general application of those remedial measures which experience has demonstrated are adequate to the prevention and the cure of tuberculosis. The function of our Association and of this movement is to aid in the diffusion of this general knowledge and to aid in putting in motion and keeping in motion the machinery required for making this knowledge effective. Our function is to bring about that co-ordination and co-operation of the forces of society which Dr. Welch has told us is needed to make the medical science of the day count for effective results.

In spite of peace conferences, the glories and heroisms and seductive accompaniments of war still thrill the degenerate heart of man. In spite of peace conferences, we still summon and arouse the courage and enthusiasm needed for grappling with civic problems by analogies and figures of speech drawn from a militant organization of society; and so to-night, in spite of the presence of our distinguished representative of peace at the Hague Conference, we talk of our work as a warfare, a campaign or crusade against tuberculosis. And really it is a warfare or campaign upon which we are asking you to-night to enter with us. This terrible disease, with its long roll of victims and its still more ghastly record of suffering and poverty and havoc spread throughout the fair field of labor and industry, presents itself to us all as a deadly foe,

and a foe upon which it is high time that mankind should now declare war and carry on a persistent and aggressive warfare. A deadly foe I call it, for a deadly foe it is and has been, but deadly it need not be, or at least not so deadly as it has been, for science has already discovered the means of controlling it, and our Association hopes as the result of this movement to be able to supply the weapons with which this foe may be crushed, so far as this city of Albany is concerned. And crushed it will be if we make good use of our opportunities, and pressing forward with sustained interest and enthusiasm in our cause, we adopt and apply from time to time and so far as practicable the measures required for converting our knowledge into effective action.

HON. HOMER FOLKS:

(Secretary State Charities Aid Association)

NOTE.—On account of the lateness of the hour, Mr. Folks asked to be excused from speaking. He was to have spoken upon "Conditions in Albany and Vicinity in Relation to Tuberculosis" for purposes of record.

Mr. Folks dictated the following statement to be included in the proceedings of the meeting:

What about Albany?

We are more or less familiar with the facts pertaining to the State as a whole. The annual mortality of 15,000 is firmly fixed in our mental perspective. We have also heard much about the prevalence of tuberculosis in the city of New York with its disease fostering tenements with their minimum of air and light.

It has been a good deal of a surprise to the State Charities Aid Association to find that New York city is far from having the highest death rate from tuberculosis among the cities of the State. We find that the group of cities in the Hudson Valley appear to suffer more severely than any other cities in the State. Without attempting to mention them in the order, it appears that Cohoes, Albany, Troy, Rensselaer and Kingston all have death rates from tuberculosis far higher than that which prevails in the great city of New York with all its unfortunate tenement house conditions. In the city of Albany, we find that during the past 8 years, 1900 to 1907 inclusive, the deaths from tuberculosis numbered 1717 an average of 214 per year. The total number of deaths in the city of Albany during this period was 14,259, so that the deaths from tuberculosis amounted to 12.6 per cent of

the total number. Turning to the deaths occurring between the ages of 20 and 50, the productive years of life, we find that the percentage of deaths in Albany due to this disease during the past 8 years has reached from 26.81 per cent to 29.93 per cent., only a shade less than one-third of the entire number of deaths in this age period.

It is difficult to overestimate or even to convey any adequate impression of these terrible facts. In the city of Albany the deaths from tuberculosis during 1907 occurred considerably more frequently than one every other day. They average 4 per week. The economic loss constitutes a most serious drain upon the productive efficiency of the community. If an able-bodied slave was worth \$1,000 or more, certainly a free man is worth as much and the 143 persons between the ages of 20 and 50 who died in this city last year from tuberculosis represent an actual loss in wage earning capacity of not less than \$15,000 per annum to say nothing of all the burden arising from illness and death, from orphanage and widowhood.

Having said this much, it is a pleasure to be able to add that in no other city in which we have made an investigation have we found as much intelligent work already under way as in Albany. The reporting of all cases of tuberculosis to the health authorities and the establishment of a complete register of such cases have been repeatedly set forth as the first important step in the control of the disease. I am pleased to be able to state that registration has made very substantial progress in Albany and that about 28 4-7 per cent of all deaths from tuberculosis last year were of patients who had already been registered as such in the health department. A day camp for tuberculosis was maintained during the summers of 1905 and 1906 and the records indicate that the patients in a majority of cases were greatly improved by the care which they there received. The Guild for the Care of the Sick is doing able work in the home care of a small number of consumptives,—would that their means and energies could multiply so as to include in their beneficent work a hundred fold of the present number of their beneficiaries. The patients suffering from tuberculosis at the County Alms House are segregated from other patients.

On the other hand, it has to be said that the sanitary oversight of the homes of the people is as yet in its infancy. The provisions for insuring proper sanitary conditions in tenement houses

and, generally, in the homes of the poorer classes of people are woefully inadequate, and the practice of spitting upon the streets and street cars and in public places is most alarmingly prevalent.

The city of Albany is a city set upon a hill. It should set an example to all its sister cities in this region. It has before it an exceptional opportunity to lead the way. We shall confidently look to its local authorities and its public-spirited citizens to promptly set on foot comprehensive measures for the control of this disease, and we shall expect to see a steady reduction in the mortality from this cause until may we not hope a new generation may find it reduced to but a fraction of its present proportions.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
DR. A. R. MOULTON, FIRST ASSISTANT PHYSICIAN, PENNSYLVANIA
HOSPITAL FOR THE INSANE, PHILADELPHIA PA.

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(Continued from February Annals, page 171)

CHAPTER III.

As Ruth descended the hospital steps, she looked eagerly for the lake but could not see it. The extensive lawn, smooth as velvet, was crossed by gravelled walks and dotted here and there with plots of choice flowers, rivals of their neighbors in the green-house near by. A gigantic oak tree stood, a fitting sentinel, near the great stone building. The gardener had dug deep around its roots, that he might nourish it with water, and comfortable seats had been placed within its ample shade. The inmates of the hospital called it "The tree," as though all other

trees sank into insignificance beside its massive proportions. Did the Father, when he planted it know of the suffering humanity that would rest beneath its branches?

The attendant kept near Ruth as she slowly followed the other patients, who led the way to a large orchard. It was a beautiful sight with its many rows of young trees, showing careful training. The branches drooped with their weight of ripened fruit, while on the ground beneath apples peeped out from the grass, red and golden. Patients from other wards were there with their attendants, and they all seemed acquainted. Seating themselves upon the grass they laughed and chatted merrily together. Ruth was astonished. Were these insane people? They seemed happy and free from care. She stood leaning against a tree, and tried to think what it could mean. Slowly it came to her that these people were mocking her, because she had been so terribly wicked as to be persuaded to leave her children. She grew dizzy and sick at the thought. If the ground would open and hide her from sight, but no; there she was, the butt of their ridicule, the object of their scorn. If she had known she was with patients who were nearly well, perhaps soon to go home, she would not have been so mystified. She had been placed upon a convalescent ward, that she might be quiet, and only such patients as these were allowed the privilege of the open grounds. Could she have looked over the high board fence, that enclosed a large grove in the rear of the hospital, she would have seen a very different class of patients.

Ruth tried to understand what the others were saying, but she might as well have listened at the "Tower of Babel," for, to her, it was a confusion of voices. After a while, some of the women commenced filling their pockets with apples, and one woman more than the others attracted Ruth's attention. She was of middle age, medium height, fleshy, with plain, coarse features, and black hair cut square in her neck. She ran from one tree to another, picking the largest and best. She reminded Ruth of a hog, by which, not very complimentary title she ever afterwards remembered her.

They soon returned to the hall. Ruth, disappointed and heart-sick, was glad to be alone again. She was distrustful of those around her, thinking they were not her friends. Auntie Harrington came and offered to read to her from a book of poems which she held in her hand. "I have read them to those who

have been comforted by them, and you seem very lonely," she said. She looked so kind that Ruth thought perhaps she had found a friend, and gave assent. The low, tremulous voice, fell soothingly upon her ears; but her brain was in a whirl of confusion. Her husband and children were constantly in her mind and she wished herself with them again. She would try, oh so hard, not to trouble them. Suddenly these words caught her ear,—

"Oh traveler if the way be dark,
Count earthly gain as dross,
And bravely win the heavenly crown
By wearing well the cross."

Wear the cross and win the crown. Had she not tried and failed? Now she could not even try, and there would be no crown but one of thorns for her. The doctor came in and Auntie Harrington went away leaving the book behind her.

"Did you have a pleasant walk?" asked the doctor.

"No, sir. I do not like to go out. I wish to stay alone."

"But that is not well for you, and I wish to have you go out on the ward to-morrow, and mingle with the other patients. Have you eaten anything to-day?"

"All that I could," Ruth answered.

"But not enough I am sure. I wish you to take more nourishment that you may gain strength. I shall be sorry to be obliged to feed you, but shall do so if you do not eat more than you have." Ruth, dreading to be fed, promised to try to do as he wished. She asked to be allowed to eat her food in her room, but the doctor refused her request.

While they were talking, the door was opened and a woman walked in and seated herself, as though she had come to stay, but the doctor evidently thought otherwise, for he told her to go away. She obeyed him, showing her displeasure by shutting the door, none too gently behind her.

"Do not talk with her," said the doctor to Ruth, "she will do you no good." Ruth felt that she never wished to speak again to anyone. She resolved to end her life, in some way, as soon as possible. After the doctor left her, she took her handkerchief from her pocket, and tied it tightly around her neck; but her labored breathing attracted attention, and, hearing footsteps approaching, she quickly removed it. She tried holding her face

under water, but found that a difficult thing to do, and then decided that it would be better to wait until night came, thinking she could more easily accomplish her purpose, when the attendants were asleep. After supper was over, she sat down in her room to wait.

Seven, eight, nine o'clock, and the attendant, when locking the doors for the night, looking in, saw Ruth in bed, apparently asleep. Medicine was brought to her, but this time she refused to take it. She had work to do, and she did not wish to sleep. However, they were equal to the emergency, one holding her hands, while another pinched her nose, so that she was obliged to open her mouth to breathe, when lo! down went the chloral, and before Ruth had recovered from her astonishment, they were gone, with the words,—“That’s the way it’s done.”

She tried hard to keep awake, but in spite of her efforts, her eyelids grew heavy, and soon she was asleep. When she awoke the room was dark, and she did not know how long she had slept.

Hark! What did she hear? Some one was singing. The words came clear and sweet:

“Jesus, lover of my soul,
Let me to thy bosom fly,
While the nearer waters roll,
While the tempest still is high.”

She listened, with hushed breath, that she might not lose a word,

“Hide me, oh my Savior hide,
Till the storms of life are past.”

She was back again, in the village church, with the friends of her childhood. She could see them now so plainly. Her sisters and brothers were with her once more. She could hear the prayer and words of counsel, and, although the singing in the hall ceased, the voices of long ago took up the strain,

“Leave, oh leave me not alone!
Still support and comfort me!”

Once they were simply beautiful words to her, but they have a deeper meaning now. Well may she join when they sing,

“Cover my defenceless head
With the shadow of thy wing.”

The coming of the night-watch broke the spell, and the vision faded, leaving Ruth, once more, behind bolts and bars. When the sound of footsteps had died away, she left her bed and groped her way in the darkness, to the mirror which hung over the bureau. She took it down and tried to find her way back; but, in her excitement, she became bewildered, so that, although the room was small, it was some time before she succeeded in doing so. She got into bed with her prize, and hid it under the blankets, then waited for the night-watch to pass again that she might not be detected. The moments seemed like hours, but at last the steps passed by her door. Now is her time; she must not stop to think; and, pressing her hand upon the glass, she broke it. "It will be only the work of a moment," she thought; but she found that she was mistaken. The glass was dull, and the thought that she might not succeed made her desperate. Summoning all her courage, she drew the glass several times across her throat, and then she was glad to feel the blood trickling slowly down.

Feigning sleep when the night-watch looked in, she was not detected; and, as soon as the door was locked, she tried to finish her work; but her hands were so weak that she decided to wait until daylight, when she could see to cut the main artery. She arose early and dressed herself; then, selecting a piece of pointed glass, and a larger piece to look in, she sat down and tried again to end her wretched life. She had already made quite a wound but had not cut deep enough to do serious harm. Upon looking in the glass she grew faint and leaned back in her chair, unable to rise. How long she sat there she did not know; but the attendant unlocking the door aroused her. The girl did not enter the room for a few moments, and Ruth tied a handkerchief closely around her neck, and secreted two pieces of pointed glass in the bosom of her dress, before she was called for to go to the dining-room.

Ruth sat at the table, but did not eat. When she returned to her room, the door was locked, and she was led to a seat in the ward. The doctor came to see her, and, after dressing the wound, he ordered the attendants to take her to her room and search her. When Ruth's dress was loosened, the treasured pieces of glass fell upon the floor and her hope was gone. After the search was over, she was led back to a seat upon the ward, and the door of her room was locked.

CHAPTER IV.

During the first weeks of Ruth's stay in the asylum, she grew rapidly worse. She imagined that every one had conspired to deceive her, even Auntie Harrington, who had seemed so kind. She seldom spoke, and left her seat only when obliged to. Every one in the hall seemed to look like some one she had known, and she thought, "they have come here to represent those who have been my friends." Auntie Harrington represented Grandma Reed, and an aged lady, in the room opposite her own was, she thought, the image of her Grandmother Saunders, who had been dead many years. The white cap and kerchief were the very same.

One day, as Ruth was passing by, she heard the old lady groaning, evidently in great distress. Stepping inside the door of her room she said to her, "I am very sorry for you, can I help you?"

"Go away. You can do me no good. I'm in Hell," was the reply.

Not prepared to contradict the statement, and needing no second bidding, Ruth returned to her seat and solved the problem in her mind thus;—Her Grandmother had died when she was a girl of sixteen, and it happened that she had watched with her, a few hours, the night of her death.

The old lady's daughter, with whom she lived, wearied by constant watching, was snatching a few hours' sleep, and she had told Ruth to call her, when necessary. A glass of wine stood upon the table which she used to moisten the sick woman's lips. Ruth remembered that she had been very faithful, and that she did not take her eyes from the sick woman's face; but Grandmother had looked at her in such a strange way, and when Ruth asked her if she wished for something, she shook her head; but the eyes never once turned away, and Ruth did not know the Angels were calling, until Grandmother's soul had passed away.

Now she asked herself: "Why have they brought that old lady here, that resembles her so closely? Perhaps they think I killed her!"

A terrible thought; but there it was fixed in her brain. She wished she could make them know how mistaken they were.

Ruth could not understand why they should make it appear

that Grandmother Saunders was not in Heaven. Memory brought to her mind the dear old lady, sitting in her straight backed chair, knitting, always knitting, her needles fastened in a sheath of feathers at her side. Sometimes Ruth's baby brother sat upon a cricket at Grandmother's side, cutting paper with the little blunt scissors, which she wore tied to her waist by a long string.

The little brother had died, and Ruth had often thought of them together in the "Beautiful City." She remembered the stories that Grandmother used to tell of Scotland, her home in childhood, and she could almost hear her trembling tones, singing again her favorite songs,—“Ye banks and braes o' Bonny Doon,” and,

“When I've been there ten thousand years
Bright shining as the sun,
I've no less days to sing God's praise
Than when I first begun.”

“She was almost a saint,” thought Ruth, “If she has failed of Heaven, what chance have I?”

From one thing to another her mind wandered, always in the same unreasonable, troubled way, and since the day of her arrival in the hospital, she had shed no tears. She had been closely watched since her attempt to end her life, and the night following that event, the attendant had brought a strait jacket to her room, and holding it up before her said,—“This is what you will have to wear nights, in future, to pay for your last night's work.”

Ruth had heard of strait jackets, but had no definite idea about them. This one was made of heavy cloth, fastened in the back by being laced with a strong cord, through large brass eyelets, and securely tied. The sleeves were long enough to cover the hands and they were closed at the ends, to which long strips of cotton cloth were fastened. Ruth did not think of resisting when told to put her hands through the sleeves. There seemed no way but to accept whatever came. After the jacket was fastened in the back, she was told to fold her arms, which she did. The ties, which were fastened to the ends of the sleeves, were then crossed behind her, passed through her arms and tied, and she was then made to lie down, after which long strips of cloth were passed through each arm and she was securely tied to the bed on either side.

After this was accomplished, the attendant stood a few moments, watching her patient, as though expecting some remonstrance. If Ruth had wished to speak, those cold, gray eyes that were fastened upon her, would have kept her silent; for it seemed to her, that they said plainly; "I hate you." Doubtless, the attendant did not mean to be unkind, but one word of sympathy to the helpless creature before her would have been like a drink of clear, cold water to one dying of thirst. Ruth thought of Samson, among the Philistines, shorn of his strength, and remembering that he called upon the Lord and received help, she tried to pray; but the words died upon her lips.

Oh Ruth: If you could have known the everlasting arms were around you, that your very helplessness was a prayer more potent than any words your lips could utter!

The medicine was brought as usual, but this time it was not chloral. It tasted like salt water, and Ruth thought,—“Why did they give that to me? It must mean something. Ah! I have it. The ocean is salt, and it rolls between England and America. Those girls are English and there is to be war between the countries.”

You smile, but it was a serious matter with Ruth.

The opiate put her to sleep, but her dreams were troubled; and when she awoke it seemed to her that the bed rocked to and fro, and she felt as though she was drowning. The night wore slowly away, broken by the watch on her rounds, and occasionally by a voice from another room. Each day and night brought new delusions, but the new, did not crowd out the old. When sleeping she had such vivid dreams that she called them visions, often saying to herself,—“Strange visions come to me.” The attendant often left the curtain raised at night, and Ruth would watch the stars, especially one more beautiful than the others, which she called the queen of hearts, thinking it represented a beautiful woman she had known. From the top of a tall chimney, opposite her window, she was sure some one watched her. Sometimes she saw people in her room, and again they were under the bed. One night as she lay upon her back, tied in bed as usual, in order to change her position, she drew her feet up so that the soles of them rested upon the bed. Instantly she was reminded of something that happened when she was a child. In the city, where she was living at the time, a man had been found drowned in the canal, which was not far

from her father's house. He was taken from the water, and placed in a barn near by until after the inquest. With childish curiosity Ruth had looked at him through a crack in the door. He was lying upon his back, his arms folded, and his knees drawn up, so that the soles of his feet rested upon the floor. Although the terrible sight was not effaced from her mind for a long time, it had been years since she had thought of it. She did not know his name, but the name of O'Brien coming first into her mind, she concluded it belonged to the unknown man. She wondered why that memory had come back to haunt her. They cannot think I pushed him into the water for I was a little girl. Perhaps they think my father did and for weeks that delusion haunted her.

She had worn the jacket but a few nights, when the attendant placed an additional restraint upon her, by binding her feet to the foot of the bed. To Ruth this was a positive proof that they were trying to make her miserable, and yet; terrible as were the nights, the days were far worse. At first, she had not thought of trying to starve herself, but it seemed to her that although they urged her to eat, they did not expect she would do so. Once the doctor had brought egg and milk to her saying,—“You must drink this or I shall feed you. You can take your choice.” The dread of being fed conquered, and she drank it. “Well done, Mrs. Campbell,” said the doctor laughing. “He did not think I would drink it,” was Ruth's thought, and the next day she refused all food. The doctor came with two attendants who held her hands, while the doctor opened her mouth and poured the food into her stomach through a rubber tube which he run down her throat.

Only once, after the visit to the orchard, was Ruth taken out to walk. She ventured to offer some resistance, but was obliged to go. This time they went in a different direction. Ruth could see the lake in the distance, but she was closely watched. A large farm was connected with the hospital, and some one proposed a visit to the barn. The pigs in pens outside attracted much attention, but Ruth lingered near the cattle in the barn. She was sure they were sorry for her; for their faces showed a dumb pity which they could not speak. She stroked the heads of the calves, remembering that they had been her pets in childhood, and she went out feeling that she was leaving friends.

The party lingered near the barn, and Ruth, leaning against a fence, saw, on the other side, at the foot of a bank, a railroad track, and almost at the same time, her quick eye caught sight of a rapidly approaching train. In an instant she tried to throw herself over the fence, and would have succeeded, had not a patient, who was standing near, caught her by the arm and screamed. The attendant came running up and drawing her back said: "You cannot do that." After this she was taken to ride a few time in the hospital carriage, but she always sat with closed eyes, speaking to no one. The doctor, seeing that it troubled her without doing her good, allowed her to remain in the hospital.

(To be continued)

Editorial

On the following morning, at five o'clock, D'Artagnan arose, and descending to the kitchen without help, asked, among other ingredients the list of which has not come down to us, for some oil, some wine, and some rosemary, and with his mother's receipt in his hand, composed a balsam with which he anointed his numerous wounds, replacing his bandages himself and positively refusing the assistance of any doctor. Thanks, no doubt, to the efficacy of the gipsy's balsam, and perhaps, also, thanks to the absence of any doctor, D'Artagnan walked about that same evening, and was almost cured by the morrow.

ALEXANDER DUMAS.

The Three Musketeers.



The Campaign
against
Tuberculosis.

The ANNALS this month is a unique publication in so far as it presents the addresses delivered at the large public meeting in Albany, upon the subject of tuberculosis. Probably no event in medical history has represented such a determined attempt to annihilate a universal foe to health, as this State-wide attack upon a single disease. Under the auspices of the State Charities Aid Association, large numbers of people have been stimulated to action in Utica, Rochester, Albany and other cities, and it is the plan to carry this aggressive campaign into every community of the State.

The purpose of the popular meeting is to arouse public sentiment, and to direct attention to the need of universal co-operation and concerted action. This is to be followed by the organization of effective local committees for detail work, and it is not too much to expect that tuberculosis will be held in control, and possibly eventually stamped out.

As a corollary to the propositions suggested in the public meeting, the principles of action have been crystallized in an admirable little monograph, by Dr. Henry Hun, which has been recently issued. The two problems to be met are, first, the cure of persons suffering from the disease, and second, the prevention of its spread.

Dr. Hun emphasizes the latter: "There is no measure or series of measures tending to prevent the spread of tuberculosis which can compare in importance with these two: the removal of advanced cases of tuberculosis from unsanitary homes to proper hospitals and the thorough cleaning of the rooms which they vacate."

Complete isolation is, of course, impossible, but the infection may be controlled. Dr. Hun's advice is summarized as follows: "In an ideal community, all cases of pulmonary tuberculosis should be registered and incipient cases should be cared for and, if possible, cured by residence in suitably placed and well-equipped sanatoria, and in this work both the State, the church and private charity should combine.

"Moderately advanced cases should be cared for and rendered harmless to the community by dispensaries and by house to house visitation. This work should be done by the combined efforts of the municipality and of the church and private charity, through a central organization such as the Guild for the Care of the Sick.

"Advanced cases, which cannot be properly isolated at home, should be isolated and cared for in special hospitals. This should be done by the municipality and by private charity.

"Last but not least, rooms vacated by tuberculous patients should be at once disinfected and cleaned at the expense of the municipality, under official supervision.

"The State should enact laws which will permit and compel all municipalities to do all that is possible to stamp out

this disease, and should define the duties of the various health officers of the State and provide for their prompt removal for any neglect of these important duties.

"The municipality should establish tuberculosis hospitals and dispensaries and should disinfect all infected rooms.

"Surely the clergy and the churches have a great work here, in carrying out some of the suggestions made above. They can support a certain number of incipient cases in sanatoria. They can unite to give aid in the dispensary and the Guild work, and can organize classes for the education of consumptives, and while not neglecting the souls of these unhappy persons, the church can do much to improve their bodily condition and can make their life and death happier and more full of those great gifts, courage and hope."

Little Biographies and the Eponymic Diseases

XXVI. LUDWIG

WILHELM FRIEDRICH VON L. LUDWIG was born in Uhlbach near Stuttgart, September 16, 1790. He received the degree of Doctor of Medicine from the University of Tübingen in 1811, and was appointed surgeon to a regiment, later having charge of a field hospital in Smolensk during the Russian campaign. In the retreat to Wilna he became ill and was kept in Russia as a prisoner of war until 1814. In 1815 he was appointed Professor of Surgery and Obstetrics in the University of Tübingen. Ludwig early in his career became noted as a surgeon and diagnostician. In 1816 he was appointed Court Physician by Emperor Frederick, and in 1817 he received the same appointment by Emperor Wilhelm. He was recognized all over the country as an authority in general medicine and particularly in surgery and obstetrics. In 1844 he was made director of the medical institute. From 1835 to 1846 he was the head of the Würtemberg Medical Society. Ludwig did not make many contributions to medical literature. His two best known writings were those published in 1836 and 1847, the one being a description of a new form of inflammation of the throat, still known as Ludwig's angina, and the

other a description of a method for healing artificial anus. He was held in high esteem by his colleagues, and had a large consulting practice. Ludwig died December 14, 1865. He was not married and left most of his considerable fortune for founding a hospital in Würtemberg. The hospital was started in 1869 and finished in 1874.

NOTE.—Ludwig's angina is a diffuse purulent inflammation in the deeper tissues of the pharyngeal mucous membrane, which may extend to the larynx and glands of the neck, and involve other organs. The condition is serious. Externally a board-like hardness of the tissues is noticed on palpation.

C. F. THEISEN.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR JANUARY, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption	14	22	14	16	20
Typhoid fever	1	1	2	3	1
Scarlet fever	0	0	0	0	3
Measles.	0	0	0	1	0
Whooping-cough	0	1	0	3	1
Diphtheria and croup.....	1	0	1	4	7
Grippe	2	3	3	4	13
Diarrheal diseases	3	3	2	0	1
Pneumonia.	16	21	15	23	22
Broncho-pneumonia	3	5	4	3	2
Bright's disease	15	19	17	14	16
Apoplexy	9	14	8	10	14
Cancer	8	9	13	10	15
Accidents and violence.....	3	8	3	5	12
Deaths over 70 years.....	32	41	28	41	58
Deaths under 1 year.....	20	16	15	11	9
<hr/>					
Total deaths	135	181	145	180	207
Death rate	15.89	21.30	17.06	21.18	24.36
Death rate less non-residents.	14.83	20.01	15.77	19.18	22.00

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital.	11	4	8	6	7	7	12	4	11	8
Albany Orphan Asylum.	0	1	0	0	1	0	0	0	0	0
County House.	2	0	4	0	1	2	6	0	8	2
Child's Hospital.	0	0	0	0	0	0	3	2	0	0
Homeopathic Hospital.	0	0	1	0	0	0	1	5	2	1
Dominican Convent.	0	0	0	0	0	0	0	0	1	0
Home for Friendless.	0	0	0	0	0	0	0	0	1	0
Hospital for Incurables.	0	0	1	0	0	0	1	0	0	0
Little Sisters of the Poor.	1	2	1	0	0	3	5	0	3	0
Penitentiary.	0	0	0	0	1	1	0	1	0	0
Public Places.	0	0	2	1	2	0	0	1	0	1
St. Margaret's House.	1	0	1	0	4	0	1	0	0	0
St. Peter's Hospital.	4	1	3	3	4	1	3	4	4	2
Births at term.										89
Marriages.										11
Still births.										4
Premature births.										3

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were one hundred and ninety-four inspections made, of which ninety-nine were old buildings and ninety-five new buildings. There were forty-four iron drains laid, eight connections to street sewers, eleven tile drains, two urinals, fifty-one cess-pools, seventy-seven wash basins, seventy-seven sinks, sixty-four bath tubs, forty-two wash trays, two trap hoppers in yard, one hundred and seven tank closets, seventeen shower baths. There were fifty-seven permits issued, of which forty-nine were for plumbing and eight for building purposes. There were twelve plans submitted, of which three were of old buildings and nine of new buildings. There were thirty-seven houses tested on complaint, eleven with blue, red, two with peppermint and twenty-four water tests. Fifty houses were examined on complaint and thirty-one were re-examined. Twenty-five complaints were found to be valid and twenty-five without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid fever	4	5	4	10	9
Scarlet fever	5	4	14	13	41
Diphtheria and croup.....	11	7	9	42	25
Chickenpox	5	8	8	1	0
Measles	1	10	4	10	43
Whooping-cough	2	0	0	0	4
Consumption	0	4	0	3	22
Totals	28	38	39	79	144

Contagious Diseases in Relation to Public Schools.

	Reported		Deaths	
	D.	S. F.	D.	S. F.
Public School No. 1.....			I	
Public School No. 2.....			I	
Public School No. 4.....			5	
Public School No. 7.....		I		
Public School No. 8.....		I	I	
Public School No. 10.....		I		
Public School No. 13.....			I	
Public School No. 14.....			2	
Public School No. 15.....		I		
Public School No. 17.....			I	
Public School No. 21.....			I	
Public School No. 24.....		I	I	
High School		I	I	
St. Agnes' School.....			I	
St. Joseph's Academy.....			I	
Assumption School			I	
St. Mary's School		I		
Miss Quinn's School			I	
Cathedral School			I	
St. John's School				I

Number of days quarantine for diphtheria:

Longest..... 43 Shortest..... 5 Average..... 17 8-9

Number of days quarantine for scarlet fever:

Longest..... 43 Shortest..... 12 Average..... 26 5-16

Fumigations:

Houses..... 51 Rooms 114

Cases of diphtheria reported..... 25

Cases of diphtheria in which antitoxin was used..... 25

Cases of diphtheria in which antitoxin was not used..... 6

Deaths after use of antitoxin..... 3

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial positive	5	6	4	34	25
Initial negative	7	5	35	70	82
Release positive	81	23	3	41	19
Release negative	22	7	9	43	55
Failed	2	0	0	27	2
Totals	117	41	51	215	183
Examination for tuberculosis:					
Initial positive	2	2	1	5	5
Initial negative	2	2	1	2	22

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	10
Factory certificates issued to children.....	15
Children's birth records on file.....	25
Number of written complaints of nuisances.....	42
Privy vaults	4
Plumbing	21
Other miscellaneous complaints.....	17
Total number of dead animals removed.....	282
Cases assigned to health physicials.....	106
Calls made	503

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A regular monthly meeting of the Medical Society of the County of Albany, was held January 2nd, 1908. Meeting called to order at 8:30 p. m., President Lempe in the chair. The following members were present: Drs. La Salle Archambault, Bedell, A. J., Bedell, E. J., Blair, Blatner, Brannon, Conway, Craig, Curtis, De Voe, Giffen, Goewey, Hacker, Harrig, Herrick, Hinman, Holding, Keens, Keough, Kreiger, Lanahan, Lawyer, Lempe, Lewi, Lomax, McHarg, Macdonald, MacFarlane, Mereness, C. H. Meyer, C. H. Moore, Neuman, G. W. Papen, G. W. Papen, Jr., Pease, Rooney, Root, Ryan, Sampson, Stevenson, Traver, Trego, A. Vander Veer, E. A. Vander Veer, Van Slyke.

It was moved and seconded that the reading of the minutes of the preceding meeting be dispensed with. Carried.

Dr. ARTHUR F. HOLDING then read a paper on the "Use of the Radiograph in the Diagnosis of Tuberculosis, with Exhibition of Plates and Slides."

Dr. E. R. ROSENAU, Director of the Hygienic Laboratory, United States, Washington, D. C., delivered a paper entitled "Anaphylaxis."

Dr. E. R. BALDWIN, Director of Saranac Laboratory for the Study of Tuberculosis, Saranac Lake, N. Y., delivered a paper entitled "Tuberculin in the Diagnosis and Treatment of Tuberculosis."

Dr. MACDONALD asked Dr. Baldwin if, in a suspected case of typhoid osteomyelitis or tuberculosis of the spine, he would consider the injection of 2.5 mg. of T. O. a sufficient test upon which to make a differential diagnosis.

Dr. BALDWIN replied that this test was not an infallible one and that he would consider the other symptoms before making a final differential diagnosis. He said that the higher the dose the less likely the condition was tuberculosis; that while others had given as high as 10 mg. the highest he had ever used was 5 mg. He also spoke of the difficulty of getting a reaction in some cases.

Dr. MACDONALD said that he felt the society was unusually fortunate in having presented to it by Drs. Rosenau and Baldwin such interesting and instructive papers. They presented a newer situation in medicine, of which a few years since little was known. It ought, he said, to awaken in all present a renewed interest and afford all an opening for reflection and study. Medicine is never old; it is new, and if we are to keep abreast of the times medicine must command our attention.

Dr. MACDONALD moved that a vote of thanks be extended to Drs. Rosenau and Baldwin for their most excellent papers.

Dr. CURTIS, who seconded the motion, spoke in the highest terms of the papers presented.

Motion carried.

Dr. HOLDING then passed among the members three slides, one of a normal chest, another of the chest of a woman suffering from miliary tuberculosis, and the third that of a man whom his attending physician was in doubt as to diagnosis, being reluctant to order him to stop work and go to the woods. This patient was submitted to a radiographic examination and the plate showed a cavity which presented absolutely no physical signs.

Motion to adjourn seconded and carried.

ARTHUR J. BEDELL, *Secretary.*

GEORGE G. LEMPE, *President.*

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALRANY GUILD—STATISTICS FOR JANUARY, 1908. Number of new cases, 167; *classified as follows*: Dispensary patients receiving home care 5; district cases reported by health physicians, 16; charity cases reported by other physicians, 83; moderate income patients, 53; old cases still under treatment, 72; total number of patients under nursing care during the month, 234. *Classification of diseases* (new cases): Medical, 73; surgical, 7; gynaecological, 3; obstetrical, 41; mothers and 33 infants under professional care; dental, 6; skin, 4; contagious diseases in the medical list, 20; removed to hospitals, 6; deaths, 14.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; attending obstetricians, 2; medical students in attendance, 4; Guild nurses, 7; patients, 5; number of visits by the head obstetrician, 2; by the attending obstetrician, 3; by the students, 32; by the Guild nurses, 57; total number of visits for this department, 94.

Visits of Guild nurses (all departments): Number of visits with nursing treatment, 1,456; for professional supervision of convalescents, 276; total number of visits, 1,732. Cases were reported to the Guild by 3 of the health physicians; by 51 other physicians and by 3 dentists; 8 graduate nurses and 3 assistant nurses were on duty.

ALBANY HOSPITAL.—The following governors were elected January 24, 1908. Benjamin Walworth Arnold, Lewis Dietz, Charles Gibson, Albert Hessberg, Henry Hun, M. D., Edmund N. Huyck, Isaac D. F. Lansing, J. Townsend Lansing, Ariel Lathrop, Gustavus Michaelis, James McCredie, Dudley Olcott, Walter Launt Palmer, John H. Patterson, Jesse W. Potts, Robert C. Pruyn, A. Page Smith, Frederick Tillinghast, Albert Vander Veer, M. D., Samuel B. Ward, M. D.

Later they organized and elected as officers: President, J. Townsend Lansing; vice-president, Charles Gibson; secretary, Frederick Tillinghast; treasurer, A. Page Smith; treasurer endowment fund, Dudley Olcott; executive committee, J. Townsend Lansing, Charles Gibson, Dr. Albert Vander Veer, Dudley Olcott and I. D. F. Lansing.

The law committee was named as follows: Albert Hessberg, A. Page Smith and James McCredie. The medical staff was reappointed for the year.

NEW YORK STATE HOSPITAL FOR THE CARE OF CRIPPLED AND DEFORMED CHILDREN.—The seventh annual report of this institution for the year ending September 30th, 1907, shows that 68 cases were treated with one death, that from tubercular meningitis; 58% of the patients had some form of tubercular joint disease; 10 left the hospital cured and 9 others so much improved that recovery was almost certain.

The need of a new and modern institution is very apparent for there are 300 applications for admission on file.

The rules and regulations regarding entrance are explained. Dr. N. M.

Shaffer, of New York is the surgeon-in-chief, but the consulting staff including Drs. A. Vander Veer and S. B. Ward, may be referred to in regard to admission.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on March 7, 1908, for the following positions: Architectural Designer, State Architect's Office, \$1,500 to \$2,500; Assistant Inspector of Gas, Public Service Commission, \$1,080; Assistant Transfer Tax Clerk, Surrogate's Office, Kings County, \$1,500; Bank Examiner, \$8 to \$10 a day; Building Inspector, State Architect's Office, \$5 a day; Engineering Inspector, State Architect's Office, \$2,250 and traveling expenses; Physician, Onondaga County Penitentiary, about \$480; Rodman, \$3.50 to \$4 a day; Steward, State Charitable Institutions, \$1,000 to \$1,500 and maintenance; Tracer, State Engineer's and State Architect's Offices, \$480 to \$900; Woman Officer, State Charitable Institutions, \$300 to \$360 and maintenance.

The last day for filing applications for these positions is February 29th.

Examinations will be held March 21, 1908, for Clerk and Junior Clerk, applications to be filed on or before March 14th.

Examinations for Stenographer will be held in March.

Full information with application forms for any of these examinations may be obtained by addressing the Chief Examiner of the Commission at Albany.

ARMY MEDICAL CORPS EXAMINATIONS.—Preliminary examinations for appointment of Assistant Surgeons in the Army will be held on May 4th and August 3d, 1908, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

Applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School, will not be examined in subjects of general preliminary education.

In order to perfect all necessary arrangements for the examinations of May 4th, applications must be complete and in possession of the Surgeon General on or before April 1st. Early attention is therefore enjoined upon all intending applicants.

There are at present twenty-three vacancies in the Medical Corps of the Army.

NEW YORK SKIN AND CANCER HOSPITAL, Second Avenue, cor. 19th Street.—The Governors of the New York Skin and Cancer Hospital announce that the following lectures will be given in the Out-Patient Hall of the hospital on Wednesday afternoons, at 4.15 o'clock. Dr. L. Duncan Bulkley, pathology in its practical bearings upon the treatment of certain diseases of the skin, March 4th; also clinical lectures on diseases of the skin, until April 15th; Dr. William Seaman Bainbridge, on the treatment of unremovable cancer, with exhibition of cases, April 22nd, 1908.

The lectures will be free to the medical profession.

AMERICAN MEDICAL ASSOCIATION ALUMNI REUNIONS.—Alumni reunions are to be a special feature of this year's meeting of the American Medical Association and all representative colleges are invited to participate. Dr. Frank M. Clement (A. M. C., 1890) will represent the Albany Medical College on the Alumni Committee.

The Alumni Committee of the 1908 American Medical Association meeting, desires the following information:

First. The kind of Alumni reunion that would afford the greatest satisfaction, be it a smoker, banquet, vaudeville or Dutch luncheon.

Second. If it is desirable to establish Alumni headquarters during the meeting.

Third. Whether the committee shall look after the hotel accommodations for Alumni and receive all mail and telegrams.

Fourth. Whether the policy of the college for the Alumni entertainment shall be complimentary.

CITY HOSPITAL, NEW YORK.—Examination for Internes to the House Staff of this hospital will be held on March 27, and 28, of this year in New York City. The City Hospital has a large general service with about 800 beds, comprising all branches of medicine, and the length of service is 18 months. All applications for the position should be addressed to the Chairman of the Examination Committee, Dr. Smith Ely Jelliffe, 64 West 56th Street, New York.

UNITED STATES CIVIL SERVICE EXAMINATION FOR SURGEON.—The United States Civil Service Commission announces an examination on March 4, 1908, at the places mentioned in the list printed hereon, to secure eligibles from which to make certification to fill a vacancy in the position of acting assistant surgeon, Public Health and Marine-Hospital Service, for duty at St. John's River Quarantine Station, Mayport, Fla., at \$125 per month, and vacancies requiring similar qualifications as they may occur.

For the specific vacancy mentioned applicants must be expert in the diagnosis and treatment of yellow fever, and persons who are immune to that disease are preferred.

The examination will consist of the subjects mentioned below, weighted as indicated:

Subjects.

Weights.

1. Letter-writing (the subject-matter on a topic relative to the practice of medicine).....	5
2. Anatomy and physiology (general questions on anatomy and physiology, and histologic or minute anatomy)...	10
3. Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry; the physiologic action and therapeutic uses and doses of drugs)	15
4. Surgery and surgical pathology (general surgery, surgical diagnosis, the pathology of surgical diseases).....	20
5. General pathology and practice (the symptomatology, etiology, diagnosis, pathology, and treatment of disease).	25
6. Bacteriology and hygiene (bacteriologic methods, especially those relating to diagnosis; the application of hygienic methods of prophylaxis and treatment).....	10
7. Obstetrics and gynecology (the general practice of obstetrics; diseases of women, their pathology, diagnosis, symptoms, and treatment, medical and surgical).....	15
Total	100

Time allowed, seven hours.

Age limit, 20 years or over on the date of the examination.

The medical certificate on the application form must be executed by an officer of the Public Health and Marine-Hospital Service, except when this requirement would work a hardship upon an applicant because of his distance from such officer he may have the certificate executed by any physician, in which event, however, he may be required to pass a physical examination before an officer of the Public Health and Marine-Hospital Service before appointment.

Applicants must be competent physicians and surgeons and graduates of recognized medical colleges, and must furnish satisfactory evidence of their moral character and ability.

This examination is open to all citizens of the United States who comply with the requirements.

This announcement contains all information which is communicated to applicants regarding the scope of the examination, the vacancy or vacancies to be filled, and the qualifications required.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed hereon, for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated

by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

SMITHSONIAN INSTITUTION—HODGKINS FUND PRIZE.—In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man."

In the furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21, to October 12, 1908, a prize of \$1,500.00 is offered for the best treatise that may be submitted to that Congress "On the Relation of Atmospheric Air to Tuberculosis."

The treatise may be written in English, French, German, Spanish or Italian. They will be examined and the prize awarded by a Committee appointed by the Secretary of the Smithsonian Institution in conjunction with the officers of the International Congress on Tuberculosis.

The right is reserved to award no prize if in the judgment of the Committee no contribution is offered of sufficient merit to warrant such action.

The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

Further information, if desired by persons intending to become competitors, will be furnished on application.

CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.

FIRST INTERNATIONAL LARYNGO-RHINOLOGICAL CONGRESS.—The first International Laryngo-rhinological Congress will be held in Vienna, Austria, April 21-25, 1908. Demonstrations and lectures by Seman, Fränkel, Burger, Onodi and others will surely be of great interest and lasting value.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.—The coming International Congress on Tuberculosis at Washington, D. C., in September, 1908, will be an unique event in the new world.

This Congress meets once in three years, it has never met in America, and after 1908, will not meet in this country for many years to come.

The Congress will put the people of this country in the relation of host to the leaders of this movement in all parts of the world. It will be a real world's Congress. It will carry on, for three weeks, public discussions of the tuberculosis problem, led by the most eminent authorities on this subject, in this and other countries. Official delegates will be present from nearly all civilized countries. There will be a course of special lectures to which all members of the Congress and the general public are invited.

The Congress will be divided into seven sections, giving ample scope for participation of both scientific and lay members.

There will be a great tuberculosis exposition, in which one can see what is going on, the world around, in the campaign against tuberculosis.

There will be clinics and demonstrations throughout the whole period of three weeks, giving medical and lay delegates object lessons on the causes and prevention of tuberculosis.

There will be very valuable publications, of which the transactions will be the most important. The transactions of the last Congress are published in three volumes. The proceedings of this Congress will require four volumes. These are free to all members of the Congress, who have paid their membership fee (\$5.00).

The cost of the Congress will far exceed the revenue derived from fees. This cost will be provided for by a special Committee of the National Association for the study and prevention of tuberculosis, which will invest a large sum in the project.

The American membership should number ten thousand persons. There are two classes of members: Active members, who pay a fee of \$5.00; and associate members, who pay a fee of \$2.00, and have all the privileges of membership, except the right to vote and to receive the printed volumes.

FIFTH PAN-AMERICAN MEDICAL CONGRESS.—The Government and people of Guatemala, C. A., with the United States Committee, Dr. C. A. Reed, president; Dr. A. Vander Veer, vice-president, and Dr. Raman Guiteras, secretary; have issued a preliminary invitation to the meetings to be held in Guatemala, August 5th to 10th (inclusive), 1908. Persons wishing to contribute to the scientific program are requested to correspond with the secretary.

August is a most opportune time to visit Guatemala as the rains are over and the climate cooler than is usual in the states at that time.

The journey from New Orleans or from New York by steamer to Porto Barrios is very agreeable. The trip will be arranged by the transportation committee. Excursions may be made to Mexico and the West Indian Islands. There will be no charge for transportation in the Republic of Guatemala.

THE SCIENTIFIC TEMPERANCE FEDERATION, at its annual meeting just held in Boston, received reports showing that during the year its collection of scientific and other data on the alcohol question has been increased by the addition of over 1,000 books, pamphlets, abstracts, and references. These were gleaned from German, French, Swedish, Italian, English, and American sources, such as medical and other scientific publications, private contributions by authors, consular and other government reports. This special library, regularly catalogued and indexed, is held at the disposal of every organization, student or social worker desiring information on the alcohol and narcotic questions. The library has been widely drawn upon to furnish information requested by physicians educators, editors, Congressmen, lawyers, clergymen, social, and temperance workers in this and other countries.

The secretaries reported also the preparation and publication of over 1,200,000 pages of scientific and educational matter relating to this special subject; a correspondence of more than 6,000 letters to all parts of the United States and to thirteen foreign countries; and the issuing of a *Press Circular* containing scientific facts to editors representing a wide range of interests and several millions of readers. Particular emphasis has been laid upon education as the rational method for securing permanent results in the temperance reformation.

Communication has been opened with many of the most active and best known organizations in social improvement through the membership in the Scientific Temperance Federation of leading members of such organizations. Among its Corresponding Members are Prof. E. Kraepelin, Professor of Psychiatry, University of Munich; Prof. A. Aschaffenburg, formerly of Heidelberg University, now editor of "*Criminal Psychology and Penal Reform Monthly*," Cologne; Dr. Max Kassowitz, Professor of Pediatrics, University of Vienna; Dr. Reid Hunt, Chief of Division of Pharmacology, United States Hygienic Laboratory, Washington, D. C.; Mr. Walter N. Edwards, F. C. S., London, England.

The officers elected for the ensuing year were: William C. Lilley, Pittsburgh, Pa., president; Mrs. S. S. Fessenden, Boston, vice-president; E. L. Transeau, Boston, recording secretary; Cora F. Stoddard, Boston, corresponding secretary; Robert H. Magwood, Boston, treasurer. The directors are: Dr. T. D. Crothers, Hartford, Conn.; E. O. Taylor, D. D., Boston; Mrs. A. J. Gordon, Boston; Dr. T. Alex. MacNicholl, New York; John Herbert, Esq., Boston; W. A. Mowry, Ph. D., Hyde Park, Mass.; John Marshall Barker, Ph. D., Boston; Rev. Richard Wright, Cambridge, Mass. The headquarters of the Scientific Temperance Federation are at 23 Trull Street, Boston, Mass.

THE ANTIVIVISECTION BILL.—At a meeting of the Committee on Experimental Medicine of the Medical Society of the State of New York, held in New York, January 15, 1908.

The following resolution was adopted.

Whereas, in the State of New York, a petition is being widely circulated among medical men for signature in favor of a proposed bill entitled "An act to prevent cruelty by regulating experiments on living animals;" and

Whereas, the said bill contains in its provisions conditions which would probably seriously impair the progress of scientific medicine,

Resolved, that the Committee on Experimental Medicine of the Medical Society of the State of New York earnestly requests the members of the medical profession to refrain from signing the aforesaid petition, and urges any who may have signed the same by inadvertence to withdraw their signatures.

The present laws of this State relating to this subject have long proved adequate and satisfactory.

PERSONAL—DR. G. SCOTT TOWNE (A. M. C., '99) of Saratoga, N. Y., has returned from Europe.

—Dr. W. L. HUGGINS (A. M. C., '99) is at 353 South Bonnie Brae Street, Los Angeles, California.

—Dr. E. G. BENSEN (A. M. C., '06) has opened an office, 184 Clinton Ave., Albany.

—Dr. H. F. ALBRECHT (A. M. C., '06) has opened his office on George Street, Green Island, N. Y.

MARRIED—Dr. J. B. GARLICK (A. M. C., '06) and Miss Margaret Esther Killough were married at the Bethany Presbyterian Church, Menands, N. Y., February 24, 1908. Dr. and Mrs. Garlick will reside at 1019 State St., Schenectady, N. Y.

DIED—Dr. DANIEL SAYER HARDENBURGH (A. M. C., '63) aged 67, died at his home in Jersey City, N. J., December 31, 1907. He was a surgeon in the Civil War.

—Dr. EDWARD B. ATKINS (A. M. C., '74) formerly of Saratoga, N. Y., died in Denver, January 8, 1908, after a prolonged illness.

—Dr. WM. MARTIN LAWLOR (A. M. C., '67) died at San Francisco, Cal., October 21, 1907, aged 62.

—Dr. FAYETTE E. SCHLEY (A. M. C., '81) aged 49, died at his home in New York City, February 8, 1908, of heart disease.

—Dr. CHARLES A. BOLZ (A. M. C., '83) died at his home in Petaluma, California, after a long illness from heart disease, February 2, 1908. He was a member of the Medical Society of the State of California and of the Sonoma County Medical Society, and was a hospital steward in the Army from 1872 to 1900.

—Dr. J. EUGENE KELLY (A. M. C., '91) of New London, Conn., died at the home of his sister in Pittsfield, Mass., January 17, 1908, aged 39.

—Dr. J. S. PEASELEE (A. M. C., '74) aged 56, died at his home Schodack Landing, N. Y., February 7, 1908.

—Dr. HERBERT N. TANNER (A. M. C., '95) died at the Buffalo General Hospital after an operation, January 25, 1908, aged 38. Dr. Tanner resided at East Aurora, N. Y.

In Memoriam

NATHAN A. CALDWELL, M. D.

Dr. Nathan A. Caldwell died at his home in Hagaman, N. Y., on the 20th day of December, 1907. Dr. Caldwell was born at West Monroe, Oswego County, in 1856, and was therefore fifty-one years of age. From childhood, as through all his life, he was a diligent student, and we early find him entering the High School at Oswego, N. Y., which educational advantage was followed by a complete collegiate course at Ionia, Michigan. He entered the Albany Medical College and received his diploma with the class of 1881, of which he was president. After graduation he took up his residence in Pulaski, N. Y., where for a time he practiced his pro-

fession and served that village as coroner. In 1883 he removed to Haganman, N. Y., where he has since resided, devoting his energies to his chosen calling.

In 1883, Dr. Caldwell married Miss Anna C. Watson, daughter of J. B. Watson, Esq., of Pulaski, by whom he is survived, together with his daughter, Anna L.

Dr. Caldwell was a public-spirited man, anxious to promote the welfare of the village, and his name is closely identified with all movements and measures looking toward the betterment of conditions. For three years he served the village as President, declining another nomination. He was health officer both of the Town of Amsterdam and Village of Haganman for many years, and largely instrumental in the erection of the Public School building that now adorns the village. He was president of his A. M. C. Class. The medical fraternity have also shown their appreciation of one so studious and devoted to his calling. He was on the staff of consulting physicians of Faxton Hospital at Utica, and a member of the Montgomery County Medical Society. He was likewise a charter member of the Haganman Chuctanunda Tribe of Red Men. After October 2nd, the doctor was confined to his home by la grippe, followed by bronchitis and rheumatism, from which an abscess formed on one of his legs, which necessitated an amputation, but in his weakened condition Dr. Caldwell failed to rally.

Current Medical Literature

MEDICINE.

Edited by Samuel B. Ward, M. D., and Hermon C. Gordinier, M. D.

Age Incidence of Gastric Ulcer in the Male and Female.

CALWELL. *British Medical Journal*, January 5, 1907.

The writer tabulated the age at which symptoms commenced in 200 cases, comprising instances both of undoubted gastric ulcer and of cases in which the symptoms of gastric ulcer were present without the hematemesis. He then reduced Bramwell's chart of 314 cases of chlorosis in the same way and superimposed it on his chart. A study of this combined chart shows the enormous rise of ulcer in the female during the age of adolescence and that this exactly corresponds with that of chlorosis.

Further chlorosis is absent in the male and this type of stomach trouble is extremely rare in the male. After the age of twenty-five to thirty, the onset of ulcer is about equal in both male and female.

There is presumptive evidence that if we exclude all cases of ordinary gastric catarrh, of dyspepsia from irritant food and of dyspepsia of neurotic origin, there is still a large number of cases of "dyspepsia" in the adolescent female which are really due to ulcer.

These ulcers often rapidly form and probably as rapidly heal and it is only by the accident of hemorrhage or perforation or of repeated relapses leading to chronicity that their real nature is recognized.

There are apparently two kinds of ulcer—one connected with chlorosis and amenorrhea, probably a developmental disease; and the other a type which occurs about equally in both male and female and not often seen till after twenty.

Cases of "dyspepsia" in the adolescent, chlorotic female are to be treated as ulcers. Cases of chlorosis are to be looked upon as potential cases of ulcer and so of hemorrhage and perforation.

Of a large number of cases which ultimately came into the surgeons hands, not one as far as history went, received full treatment of both ulcer and chlorosis.

GYNECOLOGY

Edited by John A Sampson, M. D.

Pathological Changes Caused by the Gonococcus.

B. M. ANSPACH. *American Journal of Obstetrics*, April, 1907.

The gonococcus may be identified by its form, its decolorization by the Gram method and its cultural characteristics, i. e., it will not grow on ordinary media but will grow on media composed largely of animal juices.

It is a pus-producing organism and usually affects mucous surfaces, although it may sometimes burrow beneath them and cause suppurative lesions. In addition it gives rise to a toxine called gonotoxine which exists in the body of the diplococcus and is not set free until the organism dies. This toxine is responsible for many of the symptoms of gonorrheal infections. Immunity to it is not acquired, for in chronic gonorrhea the individual is quite susceptible to a new infection.

It attacks the individual by way of the mucous membranes and in the adult female, the urethra, cervical canal and Bartholin's glands are the parts most easily infected, while the vulva and vagina are very resistant. It has very little invasive ability and it may persist for a long time without any marked symptoms; able at any time to be aroused into new activity or cause an infection in another individual. From the cervix it is very apt to extend to the endometrium, either after labor or during menstruation and once there it usually spreads to the tubes and pelvic peritoneum.

In children gonorrheal vulvo-vaginitis is usually the sole lesion, although it occasionally extends to other parts. It is very infectious and unless strict precautions are exercised it may spread throughout an entire hospital ward. The frequency and results of gonorrheal ophthalmia are well-known. The organism has been found in the circulating blood, vegetations of acute endocarditis, kidneys, joints, breast, rectal mucosa, ovaries, deep vaginal tissue, placenta, and skin lesions.

An idea of the importance of the gonococcus as a cause of acute and chronic invalidism in women, may be roughly estimated when we consider "the great number of major surgical operations performed on its account, the number of abortions which are caused by it, and the untold number of conceptions prevented by gonorrheal lesions."

Surgical Treatment of Tuberculosis of the Kidney.

H. A. KELLY. *Surgery, Gynecology and Obstetrics*, March, 1907.

The writer wishes to emphasize the great value of radical surgery in the treatment of renal tuberculosis and to demonstrate that the recognition of this fact by the profession at large will greatly improve the results of the treatment of this condition. He has never seen a spontaneous or medical cure where the tuberculosis has been clearly demonstrated, although he has seen many attempts; and in nearly every instance there has been a demonstrable advance. In the study of the specimens removed by operation, he has not seen a single instance of a healing process which preserves, for the affected part of the kidney, its functional capacity. In cases where the kidney has been destroyed, there has always been tuberculosis of the bladder and in some instances tuberculosis of the other kidney. Experience has also shown in those cases where the diseased kidney has become encapsulated and the ureter occluded that it is only a pseudo cure; for the disease remains dormant and may at any time light up afresh. The disease is a chronic one and in the writer's sixty-two patients the average duration of the symptoms, before he saw them, was three and a half years. In one the symptoms had been present for thirteen years and there was still some secreting tissue left in the diseased kidney while the opposite one was healthy. On the other hand in a single year one kidney may be destroyed and the bladder and other kidney involved. In forty of the sixty-two patients there was more or less extensive bladder tuberculosis.

The disease is nearly always hematogenous and unilateral at the start; primary tuberculosis of the bladder is very rare. Autopsy statistics show that fifty and five-tenths per cent. of the cases are unilateral and eighty-four and four-tenths per cent. of the writer's sixty-two cases were unilateral, while Albarran found a similar condition in ninety-one per cent. of his sixty-four cases.

As for the operative treatment, nephrotomy should be employed only to relieve an extensive pyonephrosis when both kidneys are involved or as preliminary to a nephrectomy to be undertaken after the condition of the patient will permit it. Partial nephrectomy has a very limited field. Nephrectomy is the operation of widest application. The ureter should be removed with the kidney if it is diseased and the patient's condition warrants it.

Tuberculosis of the bladder is not a contraindication to nephrectomy but makes the operation all the more imperative for then the bladder

condition may heal spontaneously or if it does not, it is more amenable to treatment.

The writer has had fifty-seven nephrectomies with four deaths. He emphasizes the hopelessness of medicinal and hygienic measures alone and therefore emphatically condemns the waiting treatment of tuberculosis of the kidney and advocates an early operation.

TUBERCULOSIS

Edited by Arthur T. Laird, M. D.

Droplet Dissemination by Coughing Consumptives from a Quantitative Standpoint. (Ueber die quantitative Verhältnisse der Tröpfchenausstreung durch hustende Phthisiker.)

H. ZIESCHE. *Zeitschrift für Hygiene und Infektionskrankheiten*, 1907, lvi, 50.

According to this author, the most wide spread source of human tuberculous infection is the transfer of particles of the sputum of consumptives to the mucous membrane of the mouths or noses of healthy persons. These particles may be either in the form of dry dust or moist droplets. The dry particles may result from the grinding under foot of carelessly expectorated sputum or from the dissemination of particles of sputum which have become adherent to clothing or handkerchiefs and subsequently dried.

That dust containing tubercle bacilli is infectious has been shown by experiments upon animals. Flügge however considers that the conditions under which the experiments were conducted were such that the results do not throw much light on the question of human infection. In them, the sputum has been artificially dried, its breaking into fine particles has been accomplished by violent manipulations and its dissemination has been brought about by very strong currents of air, much stronger than are found in any dwelling house. Currents of air of a velocity of one meter per second have been used. When currents of only from ten to thirty centimeters per second velocity were used, enough to cause the sensation of a strong draught, in no case did inhalation tuberculosis result.

In dry dust the virulence of the bacilli may be diminished by the unfavorable influence of desiccation, light, temperature and unsuitable medium for growth, but bacilli in moist droplets have a high degree of virulence for they are in their natural environment. This is shown by the Patterson experiments. Ten guinea pigs were kept in a cage in which there were abundant dust containing tubercle bacilli. Only one of the pigs died of tuberculosis, while 150 guinea pigs compelled to breathe air containing moist droplets in which were tubercle bacilli, all became tuberculous.

In the author's investigation, patients in whose sputum tubercle bacilli had been demonstrated were asked to remain for half an hour at a distance of sixty centimeters behind a vertical frame containing twelve glass slides with a combined area of 324 centimeters (about seven inches

square). They were directed to cough during this time, but without special effort or straining. The slides were stained by the ordinary methods.

If the cases in which only a single test was made are included in the result about forty-per cent. of the patients were found to cough out droplets containing tubercle bacilli. This percentage increases if only those cases in which more than one examination was made are considered, rising to about eighty per cent.

The droplets were of two kinds: those consisting of saliva, squamous epithelium and numerous mouth bacteria and coming principally from the mouth and throat and those consisting of pus cells and mucous and containing tubercle bacilli and only few secondary organisms. These "bronchial" droplets were considered the more dangerous. The droplets sometimes emitted during conversation are principally of the harmless "mouth droplet" variety and only very rarely contain tubercle bacilli.

The smallest number of bacilli found in any one test was 3, in other cases, 67 136, 352, 952, 1445, and in one case the enormous number of 20,174, all in a space measuring 324 square centimeters.

The author believes that practically all consumptives would, if repeated tests were made, be found at one time or another, to be capable of disseminating infectious droplets.

In order to form a just estimate of the danger from this source one should have at least an approximately correct idea of the number of bacilli necessary to cause infection under ordinary circumstances. In guinea pigs this pathogenic dose, according to the author, has been found to be about 200 bacilli. On account of the greater susceptibility of man to tuberculous infection and the greater ease with which the organisms reach the bronchi it is probable that the pathogenic dose of bacilli for man is not more than twice that for the guinea pig and 400 is suggested as a provisional estimate.

In the author's experiments, in twenty-three single tests no bacilli were found and in twenty, less than 200.

The plate was kept nearer to the patient (sixty centimeters), than a well person ordinarily comes and remains for half an hour.

At this distance the larger droplets fail to reach the plate and the author's experiments with droplets formed in a fine spray indicate that if the distance were somewhat increased even the finer droplets would not reach the plate.

He concludes that it is only very seldom that infectious droplets are disseminated thickly enough or contain on an average sufficient bacilli so that in the short time spent with a consumptive enough bacilli are inhaled to cause infection.

On the other hand if one stays continuously in close contact with a coughing consumptive, the infectious limit is easily passed, when proper precautions are not taken.

This occurs in close personal relationships, as between mother and child, husband and wife, and between the patient with advanced disease and his nurse or care-taker. Statistics show that physicians in sanatoria and laryngologists run little risk of infection.

Protective Inoculation of Cattle against Tuberculosis. (Zur Frage der Schutzimpfung von Rindern gegen Tuberkulose.)

F. HUTYRA (Budapest). *Zeitschrift für Tuberkulose*, 1907, xi, 98.

In this article the author discusses the question of the immunization of cattle to tuberculosis, especially as regards the duration of the immunity produced. After reviewing the literature on the subject he discusses the comparative value of three methods of vaccination: one, single subcutaneous inoculation; two, single intravenous inoculation; three, two intravenous inoculations (von Behring's method).

His views are based on experiments upon young calves which he reports. He was not able to complete his experiments with the third method on account of an accident. In the protective inoculations tubercle bacilli for the most part of human origin were used. The degree of immunity produced was tested by the intravenous injection of virulent bovine tubercle bacilli. The results varied in the different cases. While in several quite a high grade of immunity was produced it was not lasting and the animals tested more than six months after the protective inoculation showed little resistance to infection. The author believes that the protection afforded by a single subcutaneous inoculation is fully as great as that given by two intravenous inoculations.

The larger part of the paper is concerned with tests of the duration of artificial immunity. The animals used had been previously vaccinated by two intravenous injections of "bovovaccine" (von Behring), or of human tubercle bacilli. The author tested the immunity in four animals after seven and one-half months, and in four after seventeen months by means of intravenous injections of virulent bovine tubercle bacilli. An undoubted increase of immunity occurred in some cases but it was not lasting as indicated by the fact that the animals tested after seventeen months showed little or none.

The ability of animals to resist infection such as occurs when they are placed under ordinary conditions was tested by giving tuberculin to forty-five cattle that twenty to thirty months previously have received two protective intravenous inoculations. These animals showed just as high a percentage of reactions as the unvaccinated controls.

In conclusion, two intravenous injections of living tubercle bacilli may increase the resistance of cattle to a subsequent infection, whether artificial or natural. This heightened resistance however is of short duration. It is diminished within a year and almost completely gone after a year and one-half. The good hygienic surroundings in which the animals studied by various workers are nearly always kept, may have some share in producing the immunity reported by other workers.

The paper contains several tables and full details of the author's experiments.

Mixed Infection in Pulmonary Tuberculosis. (Ueber die Mischinfektion bei Lungentuberkulose und über die ätiologische Bedeutung derselben sowie der Darmtuberkulose für die amyloid Degeneration.)

JOSEF SORGO. *Zeitschrift für klinische Medizin*, 1908, LXI, 250.

Since Koch first raised the question whether mixed infection was a frequent occurrence in pulmonary tuberculosis, it has remained a matter of discussion and is still far from being settled. It is difficult to determine whether bacteria found in the sputum really come from the lungs or not, and in case they do whether they take an active part in producing symptoms or pathological changes, or are merely harmless saprophytes. According to Lesser, pneumococci, streptococci, staphylococci, and Friedlander's bacillus may be present in the bronchi without causing inflammatory changes.

One test as to whether these secondary organisms really come from the diseased portion of the lung has been suggested by Spengler.

The sputum is thoroughly and repeatedly washed and if the secondary organisms are still to be found inseparable from the tubercle bacillus, this fact is taken as an indication that they come from a diseased portion of the lung. When this association can not be shown by microscopical examinations of the sputum, cultures should be employed. Media should be used on which the secondary organisms grow, as well as media suitable for isolating tubercle bacilli.

If the sputum is not perfectly fresh there is a possibility that the bacteria found in the bronchial mucous or in the saliva may have penetrated the entire sputum mass. Consequently only fresh sputum should be used and the mouth should first be cleansed. It is much more likely that the sputum mass may have remained a long time in the lungs and may have become contaminated before it was expectorated. On the other hand the fact that no other bacteria than the tubercle bacillus are found does not prove that a mixed infection may not have existed in some other part of the lung than that from which the sputum came.

It is important to supplement the study of the sputum with the examination of tissues obtained post mortem. Certain specimens of sputum will not bear washing. Sputum wholly purulent goes to pieces at once, and this often happens in croupous pneumonia. Acute pneumonic processes play such an important role in the question of mixed infection that post mortem studies should be made in such cases whenever possible.

In advanced phthisis the larger portion of the sputum comes from cavities. In a cavity communicating with the air there is naturally a rich bacterial flora, and even pathogenic varieties may be present without doing any damage. The conclusion is not justified that these bacteria are a sign of mixed infection or that they were there before the cavernous destruction of tissue. That they influence the clinical picture unfavorably is also not to be assumed. The absorption of toxins through the necrotic walls of the cavity is improbable, and we often see patients with marked cavities who have no symptoms whatever of intoxication. On the contrary they look well, feel well, have normal temperature, and are increasing in weight.

Sometimes in sputum which contains only a few or no secondary organisms, they appear for the first time or increase in number toward the end of life. In one case in which tubercle bacilli were found in pure culture, bacilli of the pseudodiphtheria group were found five months before death, and three days before death numerous staphylococci. Yet in the post mortem examination they were not found in the areas of tuberculous pneumonia outside of the cavities. It might be supposed that secondary organisms would play an important part in the production of bronchitis in the neighborhood of a tuberculous focus, or in the acute or subacute inflammations of the lung tissue itself, broncho-pneumonia, etc. But all known forms of bronchitis, acute and chronic, localized and diffuse, capillary and affecting the larger bronchi, dry and with mucous, sero-fibrinous or purulent secretion and the chronic form with bronchiectasis may be due to infection by the tubercle bacillus alone. They may be due either to the direct action of the bacillus or to its toxins. The effects observed after diagnostic and therapeutic tuberculin injections would suggest the latter explanation in many cases. Post mortem study of bronchitis is difficult on account of the fact that after death the entire bronchial secretion tends to flow to the deeper part of the bronchial tree.

It is also established that the areas of broncho-pneumonia found in phthisis, sometimes near the tuberculous focus and some times at a distance possess no pathological characteristics indicating that any specific germ is the etiological factor. The processes may be serous, fibrinous, cellular or desquamative (gelatinous pneumonia), or mixed forms may occur, sometimes with and sometimes without caseation, and all may be caused by the tubercle bacillus as well as by other organisms.

The diagnosis of mixed infection has been frequently made from clinical evidence only and often without good reason. Of course it is not difficult to recognize an intercurrent croupous pneumonia or influenza. They have, however, nothing to do with the question of chronic mixed infection. Acute attacks of bronchitis of various origin come in the same category, if they do not permanently affect the clinical picture.

It has been claimed that intermittent "hectic" temperature indicated mixed infection with streptococci. Others have attributed this type of fever to the tubercle bacillus also and have not found secondary organisms more numerous during its occurrence than at other times. Kerschensteiner says that a "hectic" fever should be reported only when the other signs of septic infection (joint and heart involvement, non-tuberculous inflammation of the serous membranes, emboli, especially of the retina, metastatic abscesses) are also present. The frequency with which secondary infections are reported contrasts strangely with the absence of such symptoms. Cocci are rarely demonstrated in the blood of such cases. The assumption that hectic fever indicates a mixed infection is moreover pretty definitely shattered by the reports of cases in which sputum investigation and the autopsy showed the presence of tubercle bacilli only.

The author's experiments were carried on at the Alland Sanatorium. The patients were in the advanced stages of the disease for the most part.

Sputum examinations.—Fifty-eight examinations were made in forty-

nine cases. Nineteen of the patients died at the sanatorium and were autopsied. In the other thirty cases the tubercle bacilli were found in pure culture in the sputum twenty-six times and secondary organisms four times. The organisms found were streptococci, staphylococci and diplococci. In the nineteen cases that came to autopsy the tubercle bacilli were repeatedly found in the sputum in pure culture in thirteen cases. In the six other cases secondary organisms were found.

Examinations of pleural exudate.—In four cases in which there was serous exudate, the fluid was examined during life. In three of them the sputum contained only tubercle bacilli, in one staphylococci also. In this case staphylococci were found post mortem in the pleural fluid but not in the areas of tuberculous broncho-pneumonia, so that their presence in the fluid was probably due to post mortem invasion.

Eight cases of pneumothorax were studied. In five of these the exudate was examined during life. Four of them showed only tubercle bacilli, in these there was no communication with the open air (closed pneumothorax). The cases in which the chest wall was perforated showed the presence of secondary organisms in the exudate.

Post mortem examinations.—In only three out of seventeen cases was there any indication of mixed infection. In these cases the secondary organisms were found not only in the sputum or in the cavities but in the areas of consolidation as well. In the other cases pure cultures of tubercle bacilli were obtained from the cavities, exudates, and areas of consolidation, with the exception that in one case staphylococci were found in a cavity.

From these results the author concludes that all the clinical symptoms and pathologic changes which have been assumed to be characteristic of mixed infection may be produced by the tubercle bacillus alone. His percentage of cases of mixed infection is much smaller than that of many authors. He thinks that possibly the place where the invalid lives may be a factor. People living in cities in closed rooms may have more secondary organisms than those living in the germ free air of sanatoria remote from settlements. Studies of the sputum of patients immediately upon their arrival and after a longer or shorter stay might throw some light on this question.

Cases of amyloid degeneration.—Nine cases were studied by the author. In all but one intestinal tuberculosis was also found. In the other there was evidence of mixed infection. He believes that amyloid changes may occur in the different organs as a result of mixed infection, but that they more frequently accompany intestinal tuberculosis.

OPHTHALMOLOGY

Edited by Charles M. Culver, M. D.

An Effective Treatment of Infected Ulcers of the Cornea. (Un traitement efficace des ulcères infectieux de la cornée.)

M. EPERON. *Archives d'Ophthalmologie*, July, 1907.

The author says that, twenty years ago, when his practice was in its early stages, only two remedies for infected corneal ulcer were generally

recommended, they being Saemisch's section and the actual cautery. These he found to be untrustworthy, in too large a proportion of cases, and even harmful in some. A glance at the bibliography of the subject will, as the author says, show that he was not alone in ceasing to trust, implicitly, these two classical methods of treating infected corneal ulcers and seeking others. More than a dozen of the remedies that have been recommended during the last two decades were used by him and still he felt the need for something, in that line, in which he could have greater confidence than experience entitled him to have in any of those in question. In a peculiarly intractable case of serpigenous ulcer, having used the actual cautery, repeatedly, as well as paracentesis and all the other remedies that seemed to promise success, he sought to apply the teaching of one of his earliest masters in surgery, Julliard, of Geneva, who had contrasted the brutal with the intelligent caustics. Accordingly, Dr. Eperon wrote a prescription for a twenty per cent. solution of the chloride of zinc, intending to use it as an application to the ulcer that had so resisted other treatment. The druggist erroneously sent him a solution of the *sulphate* of zinc, of the one-fifth strength. The ulcer yielded so readily to this treatment that the author was encouraged to apply the same methods in many similar cases, with the result that he became so favorably impressed with it as to prefer it to any other, single agent for the cure of infected, corneal ulcers. He reports more than a score of grave, serpigenous ulcers, with hypopion, in which the most efficacious treatment had been to cauterize the surface of the ulcer, cleaned in advance, by application of this twenty per cent. aqueous solution of the sulphate of zinc. The pain, following such an application, is moderate, especially if the eye have been previously anesthetized with cocain-adrenalin. It is certainly no greater than that which follows the actual cauterization and does not frighten the patient as the latter is apt to do. A single application has almost always sufficed to stop the infectious process and so bring about the rapid disappearance of grave subjective and objective symptoms. Periorbital pain ceases in a few hours and sleep becomes possible again. The opacified parenchyma renews its limpidity, where it has not been irremediably changed. The hypopion is rapidly resorbed, in case it has not been too abundant.

Eperon does not insist on the accessories of the operation, which he says may be the usual. The lacrimal passages ought to be disinfected and any existent conjunctivitis properly treated. The use of warm, antiseptic compresses is a precious adjuvant. The use of the remedy in question, in cases of ulcers due to several kinds of microbes, is discussed. The author says that, while he has not yet applied it to ulcers due to gonococci, he has treated many such successfully with the thermo-cautery and regards the twenty per cent. solution superior to this, as regards certainty of action. He concludes by showing how wide a field of application this remedy has, as proved in his experience.

Effect of Pressure on the Healing of the Corneal Incision, after Cataract Extraction.

EDWARD JACKSON. *The Ophthalmic Review* (London), November, 1907.

In the normal eye the sclero-corneal coat is distended by the intraocular pressure of about thirty millimeters of mercury. The coat thus distended is able to resist the extraocular pressure to which it is ordinarily subjected, and maintains its form, and the normal relations of its parts.

The corneal section for cataract extraction reduces the intraocular tension to zero. The mechanical conditions that enable the eye-ball to maintain its shape against external pressure are, for the time, destroyed. They are re-established when the union of the lips of the wound has progressed so far that the intraocular fluids are retained, to the extent of restoring in large measure the intraocular tension.

The relation which the two lips of the wound take to each other in healing, their relative position in union, is determined during this period when the eyeball is unable to resist extraocular pressure. Cicatricial processes subsequently may partly correct original misplacement of the lips of the wound; but the mal-positions are to some extent permanent when union has once taken place.

The tendency of external pressure, unresisted by pressure from within, is inevitably to diminish the volume of the eyeball. This diminution takes place by change of shape, by distortion of the globe, and by overlapping of the lips of the corneal incision.

An incision made in the plane of a great circle of the globe, perpendicular to the coats, which Graefe originally tried to attain, might show no tendency to the over-riding of one lip upon the other. But Graefe, in the final form of his operation, departed from the plane of the great circle; and all the incisions now generally approved for cataract extraction cut the sclero-corneal coat more or less obliquely.

As has been pointed out the internal pressure after cataract extraction is zero; and the external pressure, unless it can be reduced to zero, becomes relatively excessive. Any squeezing of the lids, even their weight resting passively upon the eyeball, tends rather to diminish the volume of the eyeball, forces together the oblique lips of the wound, and produces the over-riding of the anterior or upper lip.

That such over-riding is very common after cataract extraction is quite certain. The late W. F. Norris called attention to it in a paper read before the American Ophthalmological Society in 1887. He found it present in a number of cases which he reported, and noted the evidence of it in the illustrations of Becker's *Atlas of the Topography of the Eye*.

Attention was called to the importance of avoiding pressure on the globe after cataract extraction, in a paper read at the meeting of the American Medical Association in 1891. The relation of the lips of the incision in the scar is chiefly determined *before* they unite. The careful watching of any case of cataract extraction will show that the peculiar astigmatism following that operation only appears *after* the wound has united. Astigmatism may be caused by irregularities in the union of the lips of the wound. But the peculiar astigmatism in question develops and runs its

most typical course after the most perfect and typical union. The idea of the connection of the intraocular pressure with the over-lapping of the corneal flap resembles the school boy's notion of the connection between salt and bad bread. He wrote "salt is what spoils the bread when the cook leaves it out."

The explanation of displacement of the lips of the wound by preponderance of external pressure seems more closely in accord with the facts than that of a tendency for the cornea to alter its shape by inherent elasticity. There is no behavior of the cornea at the time of operation that seems to indicate a freeing of the corneal lamellae from their state of normal tension, and so allowing the corneal flap to spring forward. At the close of a smooth cataract extraction the cornea shows no change of shape indicating release from tension. This can be confirmed by any operator who will test the corneal reflex with a Placido's disk at the close of an extraction operation. If cocain has been used in excess the cornea even tends to collapse.

Over-lapping is greatest, of course, at the centre of the wound where the movement of the corneal flap is less restricted by its relations to the adjoining tissue, than towards the ends of the incision. This does not depend on elasticity, but upon greater freedom of movement under any sort of influence.

The important, practical deduction from this theoretical consideration of the relation of the lips of the cataract incision is that *pressure upon the eyeball should be carefully avoided after cataract extraction*. Even harmful pressure cannot secure, or greatly assist, fixation of the eyeball. But very moderate pressure can be harmful, by causing such displacement of the flap as will interfere with smooth healing. Fixation of the eye and rest of the parts are favored by closure of the fellow-eye, and guarding against startling the patient by sudden noises. A dressing in light contact with the lids keeps them closed, and favors quiet of the eye by reflex influence. But the bandage, which cannot retain its position unless it makes some pressure, should be discarded after cataract extraction.

Exanthematous, Superficial Keratitis, in Measles and Other Exanthemata.
(*Kératite superficielle exanthématique pendant la rougeole et d'autres maladies exanthémiques.*)

M. TRANTAS. *Recueil d'ophtalmologie*, August, 1907.

This author, in a paper before the *Société d'Ophtalmologie de Paris*, as long ago as in 1901, estimated that superficial, punctate keratitis occurred in seventy-six per centum of cases of measles. Morax examined twenty-seven cases of measles in Paris and failed to find a single case of keratitis. Trantas thereafter examined a great many cases, very carefully and, so far from retracting his former estimate, now claims that at least ninety per centum of cases of measles will be found to be likewise affected with keratitis, if the examinations be made often and carefully enough. He uses the corneal microscope and stains with fluorescein and eosin. The keratitis usually assumes the form of very fine, punctate de-

posits in the superficial layers of the cornea, rarely affecting the epithelium. These deposits are too minute to be visible to the naked eye, hence the author's resort to the stains and microscope. Other, larger spots may be visible, either by themselves or in association with the punctate deposits already mentioned. The sensibility of the cornea is not changed and the acuteness of vision diminishes only when the deposits are confluent and are superposed on the pupillary area.

Both eyes may be affected, simultaneously or successively, or only one of them may suffer. The keratitis may begin from a day to a week after the appearance of the rash and is apt to disappear soon after the skin eruption has ceased. Some of the larger spots may recur, after having disappeared. The spots and lines vary as to their susceptibility to the effect of fluorescein and eosin.

The author says that similar lesions of the cornea occur in erythema polymorpha, syphilis, small-pox, chicken-pox, pemphigus and eczema.

The corneal affection appears late in the course of erythema polymorpha, after the subsidence of the fever. The corneal lesions, in this disease, are more apt to affect the periphery of the cornea than are those which accompany measles and are frequently situated more deeply; hence their tendency to show no effect from the use of fluorescein. These grosser spots are larger and more irregular, in erythema polymorpha than in measles and last about four times as long. The lesions attendant on syphilis are very like those accompanying erythema. The lines that occur in connection with erythema are irregular or zig-zag, whereas they are usually straight when due to syphilis. The kind of keratitis under consideration was found in eleven and one-half per centum of small-pox cases. In such cases the corneal lesions are relatively few and often consist of one line, a single, diffuse patch or a few isolated points. Two cases of phlyctenule and a shallow ulcer in each of two, fatal cases of keratomalacia were observed. In varicella the corneal lesions are very minute and ephemeral. In pemphigus and eczema, the corneal lesions are chiefly of the linear variety, superficial and minute and readily susceptible of staining with fluorescein. In some cases of these kinds of exanthems, a diffuse affection of the epithelium occurs. In one case ulceration, visible to the unaided eye, was observed.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

On the Action of Certain Drugs in the Treatment of Diabetes Mellitus and Chronic Glycosuria.

R. T. WILLIAMSON. *The Practitioner*, July, 1907.

Whilst the treatment of diabetes by a restricted diet, is of the greatest importance, there can be no doubt, that in some cases, drugs are also of service. No fair estimate of the value of drugs in this disease can be had unless the patient is kept under strict observation and the diet is

in no way altered during the period of drug administration. It is then possible to say that a certain drug has or has not influenced the excretion of sugar.

Before commencing treatment with drugs it is very important to determine the form of disease, to make a careful examination for complications and select the remedy accordingly. In mild cases where a moderately restricted diet causes the sugar excretion to cease, no drug is needed, but where even the most rigid diet fails to produce the desired result, drug treatment is indicated.

In certain cases opium and its alkaloids, morphia, and codeia, if given in large doses, have a favorable result in diminishing the excretion of sugar, especially in the milder forms. This result may be due, in part to the diminution of the appetite, since it has been shown that a diminution in the total amount of food is often beneficial. In the severe forms they seem to be of no use and may prove dangerous, as the constipation produced increases the tendency to diabetic coma. Heroin hydrochloride has much less tendency to cause constipation. Sodium salicylate and aspirin are often found much more desirable than opium and its alkaloids. Records of a large number of cases seem to show a definite diminution of the sugar excretion without any injurious effects. Sodium salicylate may be given in ten to fifteen grain doses, three to four times a day, and even larger doses may be given, care being taken to watch for toxic symptoms. **The natural salicylate should be used.** Aspirin being less apt to cause toxic symptoms, may be exhibited in larger doses. From ten to fifteen grains, three to five times each day may be given with a little lemon juice, care being taken to administer no alkalies with, or near the dose of aspirin. In cases complicated with diarrhea, bismuth salicylate is very useful. The good effects of the salicylates and aspirin are observed chiefly in the milder forms of diabetes, and, occasionally, in the severer forms in young people. In the latter cases there seems to be a general improvement out of proportion to the diminution of the sugar excretion. Williamson has never seen a case in which these drugs have produced injurious effects owing to the presence of heart and kidney complications, although many practitioners hold to the contrary.

A number of cases are described and histories are given to illustrate the author's contentions. In case one, sodium salicylate was given in twenty-grain doses three times a day, for twenty-four days and at the end of that period the sugar was reduced from 1,500 grains at the beginning of treatment to forty-eight grains. Later in the same case after an interval of non-treatment it was reduced from 1,152 grains, to a trace, with six days treatment with the same doses. Treatment with aspirin gave equally favorable results.

In the severer forms of diabetes, when the perchloride reaction for diacetic acid first appears, no single drug seems to be indicated. In these cases a large dose of calomel or mercury with chalk will frequently regulate the bowels and clear up the urine. In some cases the diacetic acid will disappear with bicarbonate of soda alone.

In hopeless cases doses of from thirty to sixty grains of the latter drug

may be given, even up to an ounce or an ounce and a half in twenty-four hours, and although there is no diminution in the sugar excretion there is usually a marked improvement in the general condition, a postponement of the approaching coma, and even a gain in weight, these conditions lasting for weeks, or, even in some cases, months.

Medical Treatment of Diseases of the Gall-Bladder.

J. H. MUSSER, M. D. *The Therapeutic Gazette*, December, 1907.

Notwithstanding the undisputed fact that if gall-stones are present and are doing mischief, the best thing to do is to have them out; there are many instances in which operative procedures cannot be resorted to. Hence we are forced to follow out medicinal lines of management in such cases.

Preceding cholelithiasis there is usually a congestion or catarrh of the biliary passages, causing a stagnation of bile, with possible infection, and secondarily the formation of gall-stones. This hepatic condition has for its origin: (1) toxic influences; (2) alterations of the digestion; (3) circulatory conditions of the liver secondary to heart disease; (4) displacement of the organ. Congestions and biliary retention are the result and predispose to gall-stones. Added to these we have the last predisposing condition—infection, which may be looked upon as an exciting cause, even though it is not likely to be operative unless there is some change in the bile.

The first step to be taken is to modify the diet. In the case of over-eaters who are giving their livers too much to do, if you cut down the intake of food one-half, even though its character is not modified, you are taking the first and best step toward preventing or curing cholelithiasis. Much of the benefit ascribed to the water cures, such as Carlsbad are largely brought about by reduction in the diet. Any specific lines of diet must be indicated by the needs of the gastric and intestinal digestion, such as hyperacidity, subacidity, or anacidity; dilation or intestinal catarrh. This is at least a twenty-five per cent., if not greater, measure in the step toward relief in cholelithiasis. Hydrotherapy is most valuable, —water both internally and externally, the latter including both general and local baths, hot and cold douches over the liver, hot and cold compresses where there is cholecystitis or cholangitis, contributing much to hepatic drainage. Where there be ptosis of the liver and other organs, as is the case in most subjects, a properly fitting abdominal binder does much to lessen, not only the frequency, but the severity of the attacks.

Musser feels. "very strongly that, unless gall-stones are doing a great deal of mischief, it is far more conservative to have our patients, if possible, take a good cure, either at Carlsbad or at one of the other resorts that are well known abroad, or perhaps at Bedford or Saratoga in this country, thereby relieving the complications, before operative procedures are resorted to." It is quite certain that after an operation, the inflamma-

tory conditions are relieved by the rest, dietetic, and hydrotherapeutic measures of a "cure." The liver being an organ containing a great amount of blood, the heart and vessels should be carefully studied and any evidence of disease in these organs remedied if possible. One can not follow any fast rules but must weigh all the features of the case and get indications for the general management of the case.

Musser regards the use of drugs, in the main as of doubtful value, excepting as they may be indicated by a study of the stools, gastric analysis, the condition of the circulation and the blood. Naming the drugs in a general way, as having virtue, alkalies come first, and of these the old-fashioned muriate of ammonia is of the greatest value. Next in order come the so-called biliary antiseptics, aspirin, salicylate of soda, or other salicylates. The secretion of bile is increased by these remedies, and it is probable that the micro-organisms are diminished.

The gall-stones that are quiet, can not be influenced by medicinal treatment, there is no solvent for them, and there is no medicinal means for removing them. The use of olive oil as a solvent, so highly recommended by many, is absolutely without value as a solvent, although relief from the symptoms sometimes results, owing probably to the fact that the accompanying hyperacidity, the gastralgia, or the pyloric spasm are relieved by its use. Before sending a case to the surgeon, relieve or dissipate all complications and then select a surgeon who has had experience and who has a carefully thought-out technique.

The Toxic Effects of Urotropin.

JOHN GILLESPIE BEARDSLEY. *The Therapeutic Gazette*, January 15, 1908, p. 19.

Very few drugs of recent origin, have proved as useful as hexamethylenamin, variously known by its trade names as urotropin, cystogen, amnioform, cystamin, etc. It was introduced by Nicolaier of Berlin in 1895 as a solvent for uric acid concretions, but later was advocated as a diuretic, and more particularly to prevent the growth of bacteria in the urine. It is, however, as a urinary antiseptic that the drug has proved its worth. Many observers have noted the good effect of the drug in cystitis and in the control of bacilluria. But, as is the case with all new and useful drugs, many used it in excessive doses and without sufficient dilution, and, as could have been anticipated, a few cases of toxic action were reported.

The virtue of the drug lies in the liberation of nascent formaldehyde in the glomeruli and tubules of the kidney, thus one can readily understand how from the careless use of this drug toxicity may result. Many physicians deny the possibility of unfavorable results from its use, while others have found it disappointing and apt to bring about complications of a serious nature. Between these extreme views we find the opinion of the practitioner whose experience has taught him the value and the danger

of the drug. A search of the literature shows that but very few cases have been reported in which the drug caused complications. The writer reports three cases, occurring in the out-patient department of the Jefferson Medical College Hospital, during two months.

In the first case, an elderly man with a retention cystitis, due to an enlarged prostate, had an acid urine containing pus. He was given five grain-doses of urotropin three times daily, being warned to dissolve the tablet in a large glass of water before taking it. He returned in two days complaining of pain in the region of the bladder, frequent urination, and that he "passed blood," and a microscopic examination revealed the presence of blood. The drug was discontinued and the symptoms ceased and in two days the blood disappeared, only to return at once on the administration of two-grain doses.

In case two, forty grains of the drug, in five-grain doses was given to a young woman with an alkaline urine with phosphaturia, induced intense itching of the skin, with a scarletinaform rash on the chest and back, and a marked sense of discomfort in the abdomen. Several days after the discontinuance of the drug and the disappearance of the symptoms, the patient was given two grains of the drug without her knowledge, when the symptoms promptly reappeared.

The third case was of an elderly man who had taken four tablets (presumably of five grains each) who came to the hospital complaining of a burning pain in his bladder, radiating to his urethra, especially when passing urine, the last few drops of which were colored with blood.

Beardsley reviews the literature, mentioning thirty-seven writers who have reported the toxic effects of urotropin, with varying symptoms, including hematuria, renal colic, abdominal pain, disuria, nausea, edema of eyelids, and albuminuria, the first being the most frequent.

The writer concludes that a certain number of individuals have an idiosyncrasy for the drug, that we may frequently use an adulterated or impure drug, or that it has been administered insufficiently diluted. He advises that in all cases during its protracted administration, frequent examination of the urine for blood cells should be made.

ALBANY MEDICAL ANNALS

Original Communications

THE INSANITY DEFENSE FOR CRIME.

Read before the Pennsylvania Association of Officers of Hospitals for the Insane, November 19, 1907.

BY JOHN B. CHAPIN, M. D., LL. D.,
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Whoever will search the history of insanity as it relates to a defense for crime will note that the important changes which have been made in the trial of persons charged with crime and alleged to be insane have occurred within a period hardly exceeding one hundred years. The trials of Hadfield in 1880, for shooting at King George III; of Bellingham in 1812, who killed Spencer Percival, a leading member of the Cabinet; of Daniel MacNaughton in 1843, for the murder of Mr. Dunning in mistake for Sir Robert Peel, although occurring at long intervals mark changes which are properly called reforms. They were events that attracted wide attention because of the official positions of the victims and the nature of the defense presented. They are changes from a previous unjust state of the law to a better and more humane practice founded upon principles of justice and scientific observation.

Following the trial of MacNaughton in 1843, the House of Lords submitted to the law judges certain questions and the answers thereupon presented have been the law of England and have influenced the courts of many of our states in framing legislation respecting insane persons charged with crime. The judges in answer to the questions propounded by the Lords laid stress upon what has been called the "right and wrong test," as the standard by which responsibility was to be determined. This criterion has been changed as the result of more careful clinical observation, as it is well under-

stood that the large majority of insane persons do know generally what is right and wrong, yet in certain instances the controlling will power is absolutely destroyed.

The opinions of the supreme and appellate courts in interpretation of law while received and accepted with due respect sometimes admit a wide latitude of opinion which seems founded on speculation and theorization. Like human judgments exercised in other fields they have been subject to change and not exempt from error.

While a reform may be understood to be a change in the direction of an advance it does not always follow that a change is a reform. Gradually a wider latitude has been assumed by the courts. The changes may even seem to be a descent from a higher to a lower plane. It is the purpose of the paper to make allusion, as memory may aid me, to a few cases in which some wide departures from former standards are shown some of which may be in the memory of some here present.

About the year 1859, a prominent citizen of Washington whose marital relations had been invaded, seeing from his own residence the waving of a handkerchief in the hands of a passer-by, which act the defendant understood from information was a signal for an illicit love-meeting with his wife seized a pistol and killed the destroyer of his family peace in a public street in front of his house. On the trial a plea of insanity was presented and the jury were instructed if they believed the defendant acted under an insane impulse he was entitled to the benefit of a doubt. He was accordingly acquitted.

In 1871 Pierce was tried in Lockport, New York, for killing a man who had seduced his sister. The defence was insanity and the form of disease was called *Mania Transitoria* a term used as early as 1845, and was intended to be applied to a sudden or momentary development of insanity. The defendant was acquitted.

Mary Harris was tried in Washington for killing A. J. Burroughs in January, 1865. In the fall of 1864, she showed a pistol with which the murder was committed. Burroughs did not fulfill his part of an engagement of marriage and practically deserted Mary Harris. Burroughs subsequently married another person and went to Washington having employment

in the Treasury Department. In January Mary Harris went to Washington and on the 30th of that month inquired of the doorkeeper of the Treasury Building for Mr. Burroughs. She was told there were several persons of that name employed and pointed out the name of A. J. Burroughs. She looked into the room where he was engaged at his work and retired to the hall to await his coming. After a short time Burroughs appeared, when she fired the fatal shot. The defense was insanity and much testimony was introduced and allowed showing a disordered mental state for some time previous to the homicide as well as succeeding the act. It is not the purpose to present more than this brief outline of the case. It does not appear that the defendant did not possess sufficient capacity to distinguish right from wrong, nor that the homicidal act was committed under the stress of a delusion. The judge charged the jury that "if the prisoner was moved by an insane impulse controlling her will and judgment too powerful for her to resist and said impulse arose from causes physical or moral, or from both combined not voluntarily induced she is entitled to a verdict of not guilty," or, if she "was impelled to the act by an insane impulse produced either by diseased conditions, or by moral causes operating on a diseased state of her system, stinging her to madness, and for the time displacing reason from its seat." A writer reviewing this charge to the jury remarked, "What is this but an invitation to the jury to gratify their own impulses in a verdict of acquittal," which was rendered.

In the case to which I will now call your attention, a wider latitude, or a notable departure from a former interpretation of the law was announced from the bench. Gen. Geo. W. Cole was tried for the killing of H. L. Hiscock in Albany in 1867 for the alleged seduction of Cole's wife, the truth of which she confessed in writing. On the first and second trial the defense was insanity. The jury on the first trial disagreed. On the second trial the verdict was "not guilty," basing it on the insanity of the prisoner at the moment when he fired the fatal shot. The trial judge had patiently charged the jury as to their duty and as he understood the law. After a prolonged absence of the jury in their consultation room they returned to the court room with a request for further information in reference to that portion of the charge which related to "insane impulses and ungovernable frenzy, and the rules of law

governing the same." In reply to this request the judge repeated in substance his charge, but also added that if there be any doubt the benefit goes to the prisoner.

It appeared in evidence that Cole left his wife at the Delevan House and walked to the Hotel Stanwix, about the distance of a square and there met Hiscock in the public corridor and instantly shot him. The jury again appeared in the court room and presented rather a plain question to the presiding judge, "The foreman stated one of the jury desired further advice upon the question of insane impulse and also upon the particular point whether if when Cole left the Delevan House he was of sound mind but upon reaching the Stanwix Hall and confronting Hiscock he became seized with uncontrollable frenzy, and thus leave a doubt as to the sanity of the prisoner at the *moment* of the commission of the homicide, whether in such case the prisoner was entitled to the benefit of that doubt." To this the judge repeated in substance portions of his charge. Again the jury came into court and handed to the judge a question in writing—"If the jury believe the prisoner was sane just before the homicide and also just after, and if the jury are equally unable to decide whether he was sane or insane at the instant of the homicide should such a doubt go to the benefit of the prisoner or not?" Judge Hogeboom replied that the jury must be satisfied beyond a reasonable doubt. If they entertained a reasonable doubt founded upon the evidence the prisoner was entitled to the benefit of the doubt. This answer seemed to relieve the recalcitrant jurors, they saw a new light, and a verdict of acquittal was at once rendered. From this trial and its various deliverances came the popular dictum or saying that a person may be sane one instant, insane at another, even while engaged in pulling the trigger of a pistol, and sane the next instant.

The trial of Edmond J. Hoppin, indicted for killing P. H. Proudfit, in July 1877, occurred in Auburn, New York, in January, 1878. The defense was a form of insanity called *Mania Transitoria*. The defendant did not belong to the criminal class, but on the other hand came of a good family, had a careful home training, and had a trusted position in a country store. The family consisted of the mother, a sister, and the defendant. The sister was the object of attention by Proudfit to whom she became engaged to be married. Under promise

of marriage she became pregnant and gave birth to a child. In the meantime Proudfit left the locality and did not fulfill his promise of marriage. The mother became depressed and died shortly afterwards, it was said of grief. The sister attempted suicide through shame and fear of exposure. The calamities which visited this family in a year ended with the killing of Proudfit who ventured to return to his former home.

On the trial Hoppin was placed upon the witness stand and among other things stated that Proudfit came into his presence and addressed him in a tantalizing expression whereupon he felled him to the floor with a base ball club from the effects of which he died. Hoppin stated further that when he was addressed he was overcome with his emotions and that he was unconscious and did not remember anything of the incident of the assault until he stood over the prostrate form of Proudfit. No evidence sufficient to form an opinion that the defendant was insane before the killing was presented. Aside from the instantaneous act of striking the fatal blow given under circumstances of great provocation there was nothing on which to found the hypothesis of the existence of insanity.

Our interest on this occasion is the charge delivered by the trial judge. He stated among other things that the defendant was properly a witness in his own behalf and if the jury believed he was in an unconscious state of mind when he struck the blow that caused death they should give it consideration as the prisoner was entitled to the benefit of any reasonable doubt. The jury rendered a verdict of acquittal.

The cases which have been cited thus briefly are not presented that they may have a re-trial, but to show the greater latitude and notable departure from the dicta of judges of a former period—changes which have been wrought within less than fifty years. The cases which have been presented and other cases coming within my own experience as a witness which I might cite, have had similar features in that they have had to do with the invasion and destruction of marital relations and have aroused those instinctive sexual passions and resentments that are the strongest implanted within the human breast.

A condition of insanity is a legally recognized release from responsibility for criminal actions. When it is supposed to

have existed in such cases it is a recognized procedure to summon experts to express opinions supposed to be formed from special experience that might aid the court in forming a conclusion. If the judges can be said to have changed the standards (and many of the changes have been wise, just, and in accord with clinical experience), our own profession can not be charged with not being resourceful in coping with the perplexing and varying psychological problems every new case presents. Of the nature and quality of expert testimony that has sometimes been presented it may better become one who has had his experience to be extremely modest in expressing opinions, yet there is little hazard in stating there will be a general agreement that the differences of opinion that are arrayed display the uncertainties of science so-called. There may be a proper reserve and even diffidence in expressing even this judgment about statements and opinions that may be honestly entertained. In relation to questions where an absolutely correct judgment can not be expected, it must follow that grave errors must sometimes occur.

To refer to the cases briefly cited and others of which I have knowledge we have seen that a variety of forms of so-called insanity have had their day in court. The defense has been *Mania Transitoria* a sudden and instantaneous development of insanity and an equally sudden return to sanity; "insane impulse," "irresistible impulse," "emotional insanity," "sudden destruction of consciousness," that insanity may develop in one instant from sanity, and a return to sanity be instantaneous and "mental epilepsy" a most ingenious defense if it is assumed. Not to seem to be invidious there may be added to this category the last evolution of psychological theorization the "brain storm"—whatever that may mean. In the many conflicts and battles between experts the value of such testimony has sadly and unquestionably deteriorated, while the cost of its production has proportionately increased.

In all of the cases with which I have been familiar by reading or by having been a participant as a witness, there has not been as a rule any foundation laid or clinical history of the existence of insanity. As a matter of fact there has been a sudden evolution of rage, anger, or frenzy, but not traceable to delusion. In some instances the only evidence adduced consisted of the fatal blow, or the discharge of a pistol. The criminal act itself

has appeared to be the only evidence of alleged insanity. In one case I could name the alleged insanity was comprised within the moment occupied in pulling the trigger while the weapon was pointed at a vital part. In another case where the defense was "mental epilepsy," an expert testified that the prisoner pointing his pistol at a vital part and discharging five shots as rapidly as it could be operated, had time enough to have a fit between the shots and recover from it. It may be called an irresistible impulse that accounts for the crime, yet, on careful analysis may be but an instance where an impulse was not resisted—as all persons are bound to curb their passions and not take a license to judge their enemy, find him guilty and proceed to be the executioner. The creation of an element of doubt has worked to the acquittal of the majority of these cases.

In the experience of those engaged in the care of the insane in hospitals, and I may include the consensus of opinion of managers who are in frequent contact with the insane, I submit that we do not find the cases we are discussing in our institutions. I myself have felt warranted in stating that they are only seen in court rooms on trial for capital crimes, and I believe this to be the general opinion.

An expert in insanity is one who is supposed to speak from experience and observation of cases. If he has seen many cases and forms of insanity, but no cases such as we are discussing, manifestly his expert opinion of the latter class is of little value beyond that of other observers. Perhaps these cases are not committed to hospitals and are more frequently observed if they exist, outside of hospitals. Speaking for myself I have not met with them in my practice. I feel like entering a strong protest against the resort to the "insanity dodge," as it is sometimes called whenever some great tragedy shocks the community. Our clinical experience, or observation of insanity, demonstrates one feature clearly that it does not come and disappear instantly, with the commission of a criminal act. It is a condition the result of long operating causes, or degeneration, whether they are observed or not noticed. I feel in sympathy with the Rochester, N. Y., trial judge who in his charge to the jury in the course of a trial in a case such as we have had in mind said, "the respectable physicians whom they had listened to are of invaluable ser-

vice to us in our sicknesses, and we call upon them to assuage our pains and aches, but when they come into this (his) court to confound and confuse us with their theories, then gentlemen of the jury I charge you to use your common sense."

Many persons have passed over the frail fabric of a bridge that has enabled them to pass from prison walls as free men, and often with a certain popular approval and even applause, because they have defended the sacredness of their homes against assault as they would answer the "call of their country to expel invasion by a foreign enemy." There are some however who look with regret upon the failure of courts of justice to convict, yet even they condone and quiet their conscience by the reflection that the way of the transgressor is hard and his fate a sad or deserved one. Human law may be imperfect, but it concedes that in determining responsibility for crime there must exist a sense of consciousness of the act or of the nature of it. The moralist may properly analyse these wretched tragedies from another view. He knows that within man are implanted emotions that are capable of a tremendous impelling force. Among the passions that may be so aroused are anger, rage, frenzy, fear, hatred, envy, resentments, revenge. In their acute stage may not the powers of inhibition or self-control, or consciousness be obtunded or wholly suspended? In extraordinary emergencies, in moments of deadly peril men have done and said things of which they retained no recollection whatever, or in other language, the mind acted automatically with such rapidity that the successive steps could not be traced or recalled. To say that the mind at such critical moments is a blank in a sense that memory fails to preserve a record fairly expresses the condition. So we may conceive that a moral shock, a cruel epithet, a malicious charge, may excite such a resentment that it will be instantly followed by a physical discharge of frenzy with momentary loss of consciousness. In the case of Hoppin cited you will recall in this connection the charge of Judge Dwight to the jury to find whether the defendant was unconscious or conscious when he struck the fatal blow. Offences coming under this category while they do not show the existence of a disease which we term insanity, they do suggest the importance of differentiating the degree of criminality rather than finding a verdict of absolute acquittal because every sane

person has some measure of self-control which he is bound to apply under all circumstances. To determine the nature and quality of criminal acts, to concede greater latitude in ascertaining the degree of criminality, still remains the unsolved problem which confronts the student of penology rather than to restrict it within the domain of the alienist. The acquittals we have reported seem to have followed the instructions of the court to give the prisoner the absolute freedom of any doubt as to the *insanity* of the prisoner at the moment of commission of the crime charged. Will the judges in the present state of speculative science enter the realms of pure theory, and not be governed by every man's actual average experience? A learned judge of Pennsylvania on reading what has been presented has written me what I take the liberty of quoting with my hearty approval coming as it does from the highest source. "Necessarily whatever rests in mere speculation however logically and ingeniously worked out must be an unsafe basis for *judicial* action, and is in general so regarded by our law. Besides the admission of it in evidence holds out almost irresistible temptation to just that kind of extravagance if not absurdity which has brought so much reproach upon expert testimony."

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

Read at the Annual Meeting of the Medical Society of the County of Rensselaer, Troy, N. Y., December 11, 1907.

By LAWRASON BROWN, M. D.,
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When honored by an invitation to address you to-night upon the early diagnosis of pulmonary tuberculosis, I told your secretary that inasmuch as I expected to read a paper upon this subject before the state society next month I did not feel that I could present a set paper to you to-night, but if he would allow me to make a few cursory remarks upon the subject of diagnosis I should be very glad to do so. You see I am preparing the way to have a partner help me bear your criticisms. Before speaking of diagnosis I would like all of you to feel at perfect liberty to interrupt me at any point by

any questions which if I cannot answer I am sure some of these gentlemen upon the platform will aid me by so doing.

The diagnosis of pulmonary tuberculosis in the earlier stages seems to me to depend more upon common than upon medical sense if I may so separate these two faculties. Of course those of us who "live and move and have our being" in tuberculosis centers naturally also think "in tuberculosis" and have at times less hesitancy in saying to a patient "You are tuberculous." I know full well the shock it produces and yet when you assumed the degree of doctor of medicine it brought these responsibilities and unpleasantnesses with it. I mention this for the reason that some men seem to me to avoid making a diagnosis of pulmonary tuberculosis as long as possible. They put it off from day to day in hopes that the trouble will prove a passing cold and so "blow over." In the diagnosis of pulmonary tuberculosis our attitude should be exactly the reverse, and we should endeavor by all the acumen and experience we possess to make a diagnosis as early as possible. Our statistics at the Adirondack Cottage Sanitarium prove beyond controversy that the ultimate results do not alone depend upon the condition of the patient at the time of discharge but also upon the condition of the patient when he enters the institution. In other words two men are sent to us, one in the incipient stage and one with a moderately advanced lesion, both have tubercle bacilli in their sputum and both are discharged apparently cured. On following a large number of patients who fit into these categories we are forced to conclude that the patients with incipient disease do much better than those with moderately advanced disease though both were discharged apparently cured.

I could also give you many more reasons for an early diagnosis, the most important of which is the question of time. Tuberculosis is not cured in a few months, it requires many and for every month the diagnosis is postponed, the patient left to his own desires and wishes, you add several, I was about to say from three to six months to the time he must devote to regaining his health if all hope of recovery be not lost. The excuse that some have offered for postponing making a diagnosis, namely, that the patient cannot leave home and so has no hope for recovery, no longer holds good, for Dr. Knopf

and Dr. Carey, as well as many of you, know recovery and permanent recovery can and does frequently take place at home. I feel as if I should ask your pardon for dwelling on so trite a subject upon which all are to-day apparently agreed.

The diagnosis of tuberculosis can often be made by a consideration of symptoms alone and indeed must often be so made. Even when the focus of disease is in the lungs the localizing symptoms may long remain absent. Petruschky as you know distinguishes three stages of pulmonary tuberculosis, first, involvement of the bronchial glands; second, involvement of the lungs (closed tuberculosis); and, third, ulceration and breaking down of the lung, a point to which I shall refer later. In all probability some patients who present very slight cough, no expectoration but some fever and its accompanying symptoms, loss of interest in life, inaptitude for work, languor, lassitude, malaise, may have a glandular affection, which may prove as serious as a pulmonary involvement, which indeed often follows. Whenever such symptoms persist, in spite of the absence of all physical signs in the lungs or elsewhere I hold it to be our duty to exclude tuberculosis, to tell the patient of our fears and to urge his co-operation both in settling the diagnosis and in taking steps of prevention. All intelligent patients will appreciate your solicitude but every once in a while you will lose some patient because another physician will tell him he has nothing wrong with him. I hope we may all be able to repress the "I told you so" which a little later, rising so readily to our lips, can be applied to many of these patients.

When the early diagnosis of pulmonary tuberculosis is mentioned the first thing that occurs to our minds is the physical signs. It was impossible for many of us until quite recently to grasp the idea that pulmonary tuberculosis could ever exist without producing physical signs. All of us I believe must acknowledge that some one possibly can detect abnormal physical signs in a lung that appears to us normal in every respect, and I hope all of us will acknowledge this without as much asperity as was contained in the reply of old John Randolph of Virginia, when twitted about his sterility: "Gentlemen," he is said to have replied, "I boast of nothing in which a negro is my equal and a jackass my superior." However be it with serenity or with asperity such is the case.

Furthermore it is no very uncommon experience in a large sanatorium to have one or two patients a year whose sputum contains tubercle bacilli and in whose chest it is impossible to detect the slightest flaw. It behooves us then, it seems to me, to be exceedingly careful when we exclude pulmonary tuberculosis because no physical signs are present. Physical signs like the Widal reaction are of great value when present, of less importance when absent. There is also another class of patients who on applying for life insurance or for any one of a dozen reasons subject their chests to physical exploration, and are told that they have extensive signs of pulmonary tuberculosis. They have had few or no symptoms, their health has been only slightly impaired and these signs have been discovered only by accident. Such patients are really not in an early stage and I mention them to emphasize the importance of physical examination in patients who present slight and very indefinite symptoms. These patients really stand in contrast with those who when they consult us have long had more or less pronounced symptoms possibly not always referable to the lungs. On examination the meagreness of the physical signs strikes us at once. Another factor that has misled some men is to base too much upon a single examination, especially where the signs are very slight or absent at first. Physical signs are notoriously uncertain, and disappear only to reappear when we think they have permanently gone. They are moreover very evanescent if I may apply that term to them. A few râles above a clavicle may after one or two coughs completely disappear and not be found present again for some hours. They may be present only on some days, only in some positions, or only at certain times of the day (more often in the morning before the pulmonary toilet). Some year or two ago my first assistant and myself examined a candidate for admission to the Adirondack Cottage Sanitarium and could detect little if any pulmonary change. A week or ten days later my second assistant had occasion to examine the patient who complained of slight pain in the left side and found signs of deep-seated consolidation (very slight dulness on deep percussion, distant bronchial breathing and marked increase in the whispering voice sounds). A few days later this was even more pronounced and withal the

patient's symptoms were considerably lessened and he had gained weight.

From these and many similar observations I am led to conclude that in early pulmonary tuberculosis the physical signs are characterized chiefly, first, by their absence (by which I betray my Irish lineage); second, by their occurrence with symptoms, often so light as to escape our notice; third, by their slightness even when the symptoms have been of long standing; fourth, by their variation and evanescence; and fifth, by their sudden appearance. In other words physical signs are but one of the links in the diagnostic chain.

To return but a moment to the symptoms of early pulmonary tuberculosis. Do not expect to find your patient with nightsweats, severe pleurisy, dyspnea, blood spitting, high fever, rapid pulse, emaciation and many other symptoms that go to make up the classical picture of consumption, so ably and so fully described by many authorities. Such finger marks he who runs may read but those of us who are willing to take some of the little time at our disposal should be able to pitch upon good evidence long before such a symptom complex is present. The occurrence of any one of these symptoms should put us on our guard. Tuberculosis is frightfully common. Expect it to meet you at every turn and suspect it as you do syphilis. You, your own family, your friends whom you have known for years, possess no immunity to tuberculosis and deserve to have this disease considered while awaiting a diagnosis as well as the stranger who passes your office threshold for the first time. Do not expect in early pulmonary tuberculosis to find unmistakable evidences of it stamped upon the patient but if you can elicit by avoiding leading questions a history of the symptoms I mentioned earlier, no matter how slight, and find that with failing general health they lead gradually up to the occurrence of any of these pronounced symptoms I have just mentioned, tuberculosis is very probable and steps to confirm the diagnosis should be taken at once. Hemoptysis of any amount should be always considered tuberculous unless other and sufficient causes are found to be present. A pleurisy with effusion is nearly always tuberculous and should in my opinion always be treated as tuberculosis if any other suspicious symptoms have occurred. Continuous loss of weight without cause is very suggestive.

The elevation of the temperature may be very slight and must often be carefully and frequently taken to be noted at all.

A friend of mine who is in charge of a sanitarium near a large city told me some time ago that he accepted only such patients who had no signs of disease below the clavicle. I asked him how it was possible to fill any institution with such cases. His reply was very suggestive and has much in it especially for those of you engaged in tuberculosis work in large cities. A patient, he said, would apply at the dispensary at which he works for admission to the sanitarium. On examination he would find in nearly every instance far advanced disease and he would then tell the patient that he could not accept him at the sanatorium but would like to examine the other members of his household. He finds a large percentage of them to be tuberculous, often in the earliest stages and so gets the cases in their true incipiency. The slightest signs of deterioration of health, when a person has been exposed, demands careful and weighty consideration.

The physical signs of early pulmonary tuberculosis are neither many nor pronounced. Acquaintance with a patient as I have said has little value in excluding pulmonary tuberculosis and the same is true also of a robust and well-formed chest. But before mentioning briefly the physical signs, I would like to dwell for a moment upon the method of producing or of observing the physical signs. The patient should be stripped to the waist with a "nightingale," a small shawl, or in the case of a man with his coat on, which can be reversed when the back is examined. He should be placed in a strong light, I prefer one falling across the chest slightly diagonally and for percussion near the corner of a room, for such a position seems to me to intensify the sound. He may either stand or sit, both of which in my opinion are preferable to the reclining position for the first examination of the lungs. The arms should hang loosely by the side and it should be impressed upon the patient that he must relax all his muscles. (See Corwin, *On the Management of Shoulders, etc.*, 1859.) After careful inspection of the front and back of the chest, the movement of the two sides should be compared and the extent of movement noted. By placing the hands upon the different parts of the chest, this procedure is facilitated and a position behind the patient who sits with head bowed forward enables

one by placing the hands over the subclavicular fossae to detect slight variations in movement that would otherwise pass unnoticed. Percussion should be mainly light and for most of us the changes in note are so slight that they can with difficulty be detected. Auscultation is by far the most important procedure in the diagnosis of pulmonary tuberculosis. It cannot be practiced through even the thinnest of apparels and the chest should be freely exposed. The quiet breathing should be carefully listened to and most important compared in many places, one side with the other. This I believe of great value. The vocal resonance especially the whispering voice should then be compared on the two sides and from top to bottom on the same side. The whispering voice is much more delicate than the ordinary voice, which however should not be neglected. When this has been done the next step is to make the patient cough. This cough should be a free easy, expiratory cough, as nearly noiseless as possible and followed at once by a full, fairly rapid inspiration. (Illustrated.) Allow a slight interval to elapse before repeating the procedure but examine the *whole* chest in this manner. This I consider the most important method in the diagnosis of early pulmonary tuberculosis and it is very interesting how indelibly it becomes impressed upon the patient's mind. Time and again, when I re-examine an old patient he tells me that his doctor does not know how to examine the chest and when I ask him why he thinks so he gives two reasons, first, he did not make him cough, and second, he examined him through all or part of his clothes. I cannot recall whether or not I was taught about the great value of making the patient cough in my medical course but it was not sufficiently emphasized. If any of you do not practice it, the next time you examine a patient have him cough and you will be surprised at the great increase in râles. I have a great number of patients referred to me as incipient cases, whose physicians send with them letters concerning the extent of the physical signs. My findings and theirs differ so widely that for years I have been wondering if on coming to the Adirondacks the physical signs do not at first greatly increase. Possibly the failure to make them cough during the examination may explain the great difference. Some may object to having the patient cough because it tires him. This cannot be denied but with cough judi-

ciously spaced this fatigue can be reduced to a minimum. Others may oppose, that after one or two coughs the râles disappear. That is perfectly true in a very small number of cases and for this reason it is always well on the second examination to begin with the suspected area and to examine the apices front and back before the bases. Some of these râles however are atelectatic in origin and so of much less importance for diagnosis. Râles that can be heard in no other way are often so apparent after a cough that diagnosis becomes child's play. This as I have said is the most important method to be used in diagnosis and I affirm that no one can say râles are absent in any chest unless he practices this.

A further refinement of this procedure, one that often produces râles when a simple cough does not, is to have the patient exhale, then cough and breathe in. He must not exhale, and then inhale however little, for what we want to do is to get rid of as much of the complemental air as possible and to get rid of it quickly. The production of râles seems to depend upon two factors, the rapidity and the amount of air expelled and the sudden though not so rapid refilling of the lungs.

Apart from the difference in movement of the two sides little information as a rule can be gained from inspection, mensuration or palpation. Percussion in regard to dulness is often of little aid but in percussing out the resonant areas above the clavicle and of the pleural sinuses, which should be of nearly equal width it is of much value. Light percussion is to be employed for this. Auscultation, as I have said, is by far the most important. The breathing on the affected side is often lessened and this may agree with a reduced pleural sinus (lessened movement of the base). Williams' sign, lessened excursion of the diaphragm as seen by X-rays, also confirms this. This suppressed or weakened breathing may be the only departure from normal, even when tubercle bacilli occur in the sputum. Grancher noted that a low roughened inspiratory murmur was the first sign in many of his patients. I have been unable to confirm this except in a few cases and my experience leads me to believe that a slightly high pitched prolonged expiration is much more frequent as the earliest sign, which is most often present just above or below the clavicle.

The production of râles by cough I have mentioned. Some men have used various drugs to increase the râles and others have found that râles could be heard when the patient was lying down. This should always be practiced when the signs are obscure and the patient tells you he cannot lie on one side. You will of course differentiate the sounds produced by the bell of the stethoscope slipping upon the skin, the friction of clothing, the shoulder rub, muscle sounds, sounds produced in the stomach or by swallowing, from true râles. If you do this and find râles in the chest of a man who is up and about, strong suspicions of pulmonary tuberculosis should be aroused. If they occur on several examinations, or persistently at one apex it is wise to make a diagnosis of pulmonary tuberculosis. Influenza may produce such râles but the burden of proof rests upon him who makes such a diagnosis.

The physical signs then of early pulmonary tuberculosis are concerned chiefly with the movement of the lungs, the change in breathing, and the occurrence of a few râles, heard in nearly all cases only during inspiration after cough.

The sputum needs but a word as all of you know the necessity of examining it every day for three or four days *in succession* on several occasions before pronouncing it free from tubercle bacilli. I mentioned the fact that Petruschky puts all patients with open pulmonary tuberculosis, i. e., with tubercle bacilli in the sputum in his third stage. The time will come, gentlemen, when he who waits for tubercle bacilli to occur in the sputum will be looked upon as a man deficient in diagnostic acumen and one dangerous for the public health. Our duty is clear, we must prevent when possible the occurrence of tubercle bacilli in the sputum.

When all the known procedures have been carried out, when the patient has been followed carefully for a week or ten days, it is at times most difficult still to make a diagnosis. The patient wants us to say positively that he has tuberculosis and wants to know if there is nothing else we can do to help decide the matter. Then I always suggest the tuberculin test, feeling that it should not be used until all other methods are exhausted. Several objections have been offered to this test. It has been said by some (who have had little or no personal experience with it) that it is dangerous. I am sure you will agree with me when I say that out of the fulness of experience

comes authority and that he who objects to the tuberculin test when he has never used it and when all who have used it extensively find it harmless, builds his house upon the sands. Others affirm that various diseases react to tuberculin and that some forms of pulmonary tuberculosis do not. I have tried for a number of years to obtain definite proof that when given under suitable conditions other diseases do react to tuberculin, and have been unable to do so, for the only proof that I could conscientiously accept would be autopsies. Furthermore we know that many of us (from 75 to 90%) who reach two score years harbor some remnant of a more or less well resisted attack of tuberculosis. Some of these foci may react when we are suffering from acute diseases. On the other hand we know that some cases of far advanced pulmonary tuberculosis do not react. This invalidates the test but little as we need it only in the very earliest stages and these are known to react more acutely to tuberculin. A tuberculin reaction does not prove that the focus is in the lungs nor does it prove that an apparently healthy individual needs treatment, but when a patient with some, many or few, of the symptoms I have mentioned reacts to tuberculin, I hold he should submit himself to a course of treatment. Like the physical signs it is but a link in the diagnostic chain.

In conclusion I would like again to emphasize the necessity for cough in the diagnosis of early pulmonary tuberculosis, the value of physical signs only when present, the paramount importance of slight symptoms, the futility of waiting for tubercle bacilli to appear in the sputum, and above all the necessity for the exercise of that most precious quality of a good physician, common sense.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

Read at the Annual Meeting of the Medical Society of the County of Rensselaer, Troy, N. Y., December 11, 1907.

BY ALBERT H. GARVIN, M. D.,

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There is a problem in the diagnosis of pulmonary tuberculosis, there is a problem in prevention, and there is a problem in the treatment.

After diagnosis is made, after prophylaxis is arranged, the question arises "What are you going to do for the patient?"

Diagnosis, of course, is paramount, for no advice and no directions can be given with enthusiasm and with conviction until this is settled. If the patient is not convinced of the necessity, as oftentimes he is not, the advice and treatment specified will be of no avail.

The highest object in the treatment of an infectious disease is one of specific nature, and various attempts have been made to approximate a specific treatment for tuberculosis, but as yet there is none that is demonstrated beyond impressionistic value.

Under specific treatment may be classed treatment with toxins of various nature, used for active immunization, derived from the tubercle bacillus, and specific serums developed by the inoculation of the germ into experiment animals in various ways for the development of the serum. The toxic treatments are all classed under the head of tuberculin, and the treatment is carried out upon two main sub-divisions—the clinical tuberculin treatment and the so-called scientific tuberculin treatment checked by the opsonic index.

The chief method of the administration of tuberculin is the injection hypodermically of small doses of the various tuberculins, increasing in size until what is termed a maximum dose for the patient is reached; a variable quantity. In the old tuberculin of Koch, for instance, the treatment begins with a thousandth or less of a milligram, the dose is repeated at the end of three or four days and doubled at each injection until the patient has reached very large doses, if he will tolerate the injection.

In the treatment, according to this method, it is the object not to obtain a febrile re-action at any time and to carry the patient through his treatment without having him manifest the tuberculin re-action. The course of the treatment varies from six to eighteen months, according to the clinician who administers it and to the resistance of the patient. The tuberculin immunity developed, so far as facts go, is exhausted in from three to six months, and a second course of treatment, and a third, etc., are frequently instituted.

The theory of the treatment is that it gives only a tuberculin immunity; it does not give a tuberculosis immunity, and it does not cure the patient of tuberculosis in any sense. But it is the impression of those who use it that in selected cases it does good, but there has been nothing in the way of figures to demonstrate that the cases treated with tuberculin differed in their course clinically in any *remarkable* sense from those not treated.

The treatment is of no use in those cases that are febrile, that are suffering from toxic symptoms, and there is nothing to indicate in any definite manner when the treatment has reached its fullest possible benefit. It is now the belief that the larger doses of tuberculin are not necessary, that just as good clinical results are obtained from the smaller doses.

In regard to specific serums and watery extract treatment, there are at the present time two that are rather prominent theoretically, but which have not been demonstrated to be of any very great practical importance in the hands of other than their originators, they are Marmorek's and Maragliano's.

The ingenuity and enthusiasm of both of these observers is worthy of the highest praise and the cases of surgical tuberculosis reported by Marmorek treated with his serum are very convincing, but his serum is difficult and long to make and reported results of treatment by others have not uniformly paralleled his results.

If any particular treatment is of any value it certainly ought to be demonstrable, and the chief objection to the use of tuberculin is not that its present use causes harm, but it can't be proven to do good.

Sahli in a recent monogram on tuberculin treatment, after citing statistics which are not convincing, states that in spite of these it is his impression that it does good.

Tuberculin in its various forms has enjoyed various fortunes since 1891, and after a violent and well justified reaction against it, it is now slowly again coming back to a certain not definitely established limit in treatment. The fundamental principle of the treatment is that tuberculosis is a localized and closely confined invasive disease, and that the whole body does not vigorously react against the infection on account of lack of stimulus. Tuberculin fills this gap.

The diseased body itself must supply in this treatment its own cure. The resistive mechanism is according to A. E. Wright measurable and the patient must be dosed properly at the proper time or the protective forces will be greatly diminished or exhausted. That these forces are limited and easily at times exhausted is well illustrated clinically.

A summary of the known facts in the active and passive specific treatment of the disease justify the conclusion that serum therapy has not any generally recognized value, also that immunization if possible at all artificially is slow and difficult. The injection of a large quantity of foreign serum over a long period is not of itself a factor to be overlooked in a serum treatment. The possibility of an immunity serum in the treatment of tuberculosis is not great.

If there is no demonstrable and generally accepted specific treatment for tuberculosis, and the possibility of the development of the immunity serum being slight at present, we come to the hard facts of the case, as to what has actually been proven to be of most benefit in the treatment of active pulmonary tuberculosis, and it resolves itself into the old dietetic, the hygienic, and the symptomatic treatment.

In regard to diet, overfeeding has been the custom to the greatest possible extent, and the amount of overfeeding that is done in certain cases seems to have passed all reason. A patient taking from eighteen to thirty-six eggs a day, in addition to two quarts of milk and three meals, does so only at the risk of the disturbance of his digestion, which sooner or later comes, and generally after a very short period of time, a patient usually not being able to stand such treatment longer than six weeks.

The metabolic changes in a disease of such long standing as tuberculosis have not been thoroughly worked out but there appears to be no great daily variation in the metabolism of

the chronic consumptive from that of a normal individual that has been very accurately demonstrated.

In the acute febrile relapse the organic phosphorous and the nitrogen output are increased, but not particularly more so than in any other acute febrile disturbance, and so far as the organic phosphorous is concerned, there has not been enough work done to definitely place any significance upon it.

From time to time there appear certain peculiar and odd dietetic ideas in the treatment of this disease, and there is cited to support the proof of the value of the procedure a list of clinical cases who did well under it. We have passed from creosotes, hypophosphites, cod liver oil and emulsions and have found them to have no material change on the length of life of a patient, but we still have to go through the same odd dietetic upheavals. It should be possible if there is any value in the curative use of a dietetic procedure to show experimentally that an animal under such diet, with the same amount of infection, does markedly different clinically from a corresponding experiment animal upon ordinary diet. The paralleling of large groups of experiment animals fed in this way and on normal diet has not demonstrated that any particular dietetic formula is of any therapeutic value as such.

Protoid, carbohydrate and fat have been experimented with definitely along this line and I might state the statistics of a number of observers that state that these therapies have no demonstrable value. Protoids in great abundance have no particular effect upon the course of the disease.

The experimental evidence of carbohydrates and fats have been extremely meager in character and there is no demonstrable proof that the greatest overfeeding of these foods have any especial therapeutic value.

The result of the whole work is that so far as specificity in diet treatment is concerned, there is none. A fact however remains that tuberculosis manifests itself, so far as the general constitution is concerned, as a mal-nutrition disease and gentle overfeeding until at least normal weight is attained and maintained is a proper and rational procedure, but when the weight has been attained and maintained for a reasonable period of time, say twelve weeks, the patient should be gradually returned to his own normal diet.

There is no specific diet that can be prescribed as ideal for

every patient, for diet is a matter of such individual temperament that a specification would be out of place in any summary. However, the diet must be properly balanced and must contain the three elemental food stuffs in sufficient abundance as to give the patient an excellent living diet, and in addition, perhaps one-quarter in excess as a factor of safety. Any increase beyond this merely overworks the gastro intestinal tract and is of no economic value to the organism, and gross overfeeding applies equally well to protoids and carbohydrates and fats in whatever form administered.

In the acute onslaughts of the disease, while overfeeding is of assistance in returning the patient more rapidly to a better general condition, three square meals a day, with perhaps two light lunches between, merely consisting of an egg and a glass of milk, or a glass of hot milk and a cracker, are of very important assistance, but after a certain length of time this extra diet ceases to be of necessity, and if continued the patient loses his appetite for his meals and does not eat at the table. The treatment of a case from a dietetic standpoint must be considered individually, for diet is largely a question of ways and means.

In hygiene we must consider the treatment of the well as well as the treatment of the sick, for the hygiene affects both the sick and the well. It is impossible to expect a patient to follow out a rational line of treatment if he does not know the reason why, and the longer the course of treatment the more essential it is that he shall know the exact reason for the performance of the various duties assigned to him. If he is given careful directions about his expectoration, without any emphasis as to the meaning, he will either suspect the truth or refuse to carry out the directions. I hold that it is the first necessity to inform the patient what the matter is and his approximate possibility of getting into perfect health, or at least a fairly satisfactory living state of health.

To tell a patient that he is suffering from consumption is one of the hardest duties of the physician, but it is one of the arts of the practice to be able to tell the truth gently, to tell the truth so that it does not hurt. The truth must be told. If the physician does not tell it in the beginning the patient will come with reproach in the end.

The patient must know definitely the nature of his disease

for his own protection and for the protection of those who are around about him, and he will not carry out any prophylactic procedures unless he understands definitely the reasons for them. Or he may continue so long in such an apparent state of health, with such few symptoms, that he may consider specific advice about sputum unnecessary germfobia on the part of the physician.

The fact that the patient knows what is the matter with him rather than depressing him unduly, puts him in a better position to fight the disease for he understands the rationale of all the orders that are given to him.

So far as any specific rules for prophylaxis, I will discuss but one briefly. The first and most essential is, of course, the careful disposal of infectious sputum, which is best done by some form of sputum box. About the house a small tin covered box, containing a proper paper cuspidor, serves best, and on the street a pocket paper box is safest. Any other device, such as spitting into a handkerchief or piece of cheese cloth, in order to be perfect in the technique means that the patient must have rubber pockets about his person, they must be carefully sterilized each day, and the person must be careful to destroy the handkerchiefs before the sputum has dried to any particular extent, and he must be careful not to get the sputum upon his fingers. Not any of these things will he do, and it has been my experience that if he will use any prophylactic measures at all he will use the pocket box.

He must be instructed that periodically, according to the infectiousness of his case, his cough must be cared for and that he must not cough on other people. But still, on the other hand, he must not be so thoroughly frightened as to the ubiquity of the disease that there is possibility of any one coming in contact with him becoming infected.

The cough in the advanced case has been proven experimentally to be infectious only once in ten times, and so far as the cough of the incipient is concerned, who has either no infectious sputum or once only in the twenty-four hours at the most, it is not infectious at all. Still, a slight possibility of infection with cough necessitates its consideration, but not as a major factor. If the sputum were properly taken care of additional infected cases in all probability would be extremely few.

After prophylaxis is considered, the next part of the hygienic treatment is the actual treatment of the patient in ways that have been demonstrated to be of most value for this disease, and it is the so-called outdoor simple life.

I wish to emphasize that successful treatment does not end with the beginning of physical signs, but if moderately advanced cases are classed as incipient and prognosis based on extent of lesion, treatment results will be disappointing. Three out of four incipient cases apparently recover if given a favorable opportunity, one out of four or more moderately advanced recover.

There are those cases of progressive tuberculosis that treated in the very beginning with all possible care have not the resistance, and it cannot be put into them to fight the disease.

In the treatment of a case a definite routine day must be detailed to the patient, according to his means—every little detail from the hour of getting up to the bed hour. If all work, rest, diet, and special exercise is not detailed in schedule the patient will not do the things told.

A sample sanatorium day at Ray Brook for an afebrile case who is exercising is as follows:

The patient rises at 7 in the morning, and has forty-five minutes for toilet; breakfast at 7.45; after breakfast each patient prepares his own bed and floor space. At 9 he is on the porch in a reclining chair, in bed with his clothes on as it were, out of doors. At 10.30 a light lunch of a glass of milk, either hot or cold as the patient desires, and a raw egg, is served. (The lunch is not compulsory.) After lunch there is a walking hour for those cases on full exercise. The patient is in his place again at 11.30 and remains until 12.30, when he has half an hour for toilet. Dinner at 1 o'clock.

The afternoon is a repetition of the morning schedule, and the patient must spend at least one hour in the evening on the porch—longer if he desires. Bed at 9 P. M., with the windows open.

The greatest activity of any patient (meaning by activity the time when the patient is on his feet) is five hours. He is in a sense in bed nineteen hours a day. The treatment can be summarized as outdoor air, maximum rest, exercise sufficient to maintain a fair degree of muscular tone. When a patient has

improved sufficiently to justify more exercise he is given light work of fifteen minutes to an hour and a half per day.

In the treatment of symptoms, cough frequently requires special attention. The cause of the cough is irritation of the pneumogastric in some part of its course, or irritation of the laryngeal above. It is a reflex and may be reflex in a lung infiltration where no expectoration exists. It is present in half of the non-infectious tuberculous infiltrations discovered, and where there can be no explanation except irritation of the nerve or the nerve ends within the lung. Any reflex, no matter in what part of the body, is to a certain extent under the control of the will, and it is largely a matter of education to control a reflex that is constantly irritated. It is perfectly familiar to you all the ease with which a patient will submit himself to throat examination after education. In the same way, a patient with a so-called spasmodic cough, if the matter is put before him in a logical way, can readily control it. If the cough is explained, the significance of the cough and the periods of cough rationally put before him, he will soon control what is unnecessary and cough will be reduced to a minimum.

It is frequently mentioned by lay visitors, and also professional visitors, to sanatoria, the great absence of cough. They come to a consumptive hospital and they expect to see a lot of cadaverous individuals sitting around on the porches, and to hear the echoing cavernous cough of the consumptive repeated continually during his whole visit, and after a few hours' stay the skeptic is apt to imagine that there are no sick people around at all. The reason for this is not on account of cough sedatives or cough medicines which are administered, but purely an educational procedure, as the patient is instructed in the meaning and the cause of cough and he coughs in as gentle and noiseless a manner as possible only for the purpose of raising what mucous or infectious material has accumulated within his chest. The effect of this education in certain cases is often very striking. A new patient entering the sanatorium for instance, coughing incessantly by night, coughing for a half hour in the morning, and coughing at intervals of five or ten minutes throughout the day, after receiving his instructions stops almost immediately and reduces his cough to two or three little hacks in the morning to get rid

of what small amount of infectious sputum there happens to accumulate within his open inflammatory lesion. Cough, however, which comes on as the accompaniment of a septicemic relapse, continuing for a period of forty-eight hours to one week, frequently requires cough sedative to relieve, but it has been my custom never to prescribe any medicine for longer than a forty-eight hour period, and if the need still exists in the case, the medicine, if it has been of service, can be repeated.

The presence of aphonia in tuberculosis is a very common symptom, and it is usual to ascribe aphonia occurring in tuberculosis to tuberculous larynx, but such is not the case by any means, for the aphonia in by far the vast majority of instances is purely a paralytic affair, due to inflammation of the laryngeal nerve, usually on one side only, within the chest. The aphonia usually varies within the twenty-four hour period, the patient sometimes having perfect voice for an hour or two, and then finding his voice slowly petering out after talking. In motor cases it usually last not longer than six weeks, and it may be as short as forty-eight hours. It is not a nervous affair as it is usually accompanied by chest symptoms and by a slight increase in signs, although it may occur when there is absolutely no demonstrable change in the patient's physical condition. The diagnosis of the condition is quite simple in cases submitted to laryngoscopic examination. Many of the so-called cures of tuberculous larynx and the citation of 400 and 500 cases of cure, have been nothing but the disappearance of motor paralyses that were co-incident with the lung inflammation. Sometimes as a result of nerve involvement there may be a permanent alteration in the patient's quality of voice.

THE TREATMENT OF FEVER.

There is no hard and fast rule that can be stated as to the treatment of fever in tuberculosis. Fever means activity and may be continued from the short tuberculin like relapses, which are characteristic in the moderately advanced case, to a long continued fever of the miliary case, or the chronic consumptive with secondary infection which exists for months.

The most important working rule in the treatment of fever is that quiet must be maintained, but as to the extent and the amount, and the means of maintaining quiet, each individual

case must be treated according to the personal peculiarities of the patient. To put a patient arbitrarily to bed as long as he has a fever above a certain definite point, say 99.4 and 99.6, and keep him there until his temperature has remained normal for one week, will not be of benefit in all cases, although some cases will yield beautifully to treatment like this if the stay in bed is not too long.

In a long continued fever case, I think it is best to put the patient to bed as long as he or she can stand it, and when the strain of the treatment and the monotony of the bed becomes so great that the patient worries himself into mental torture, a variation must be made. Frequently allowing a patient to get up for dinner, being up for one hour relieves the great monotony and the patient who is thus privileged does not consider himself sick, and treats his case with a different mental attitude than the patient who is kept in bed continuously. Patients get so used to continued low grade fever that they differ in general feelings in no discoverable way from their usual normal condition, except for a feeling of lassitude and a feeling of weakness.

When they begin to improve however, they notice an immense change in their general condition and general feelings. Sitting still or lying in bed becomes irksome in the extreme. Their old ambition returns to them and the restraint of the rest treatment becomes galling. A patient who is running a temperature as high as 101 may arrive at such a state of well being that it is absolutely impossible for him to remain quiet after he has been in bed for a period of four or five months.

A combination of the bed and of the reclining chair in these cases works best, for the bed and the outdoor reclining chair can be gradually regulated so that the patient does the best under the treatment that it is possible for him with his lung inflammation. I might state that sleeping out of doors continuously is not nearly so monotonous as remaining in bed indoors, for the patient has the varied interests of outdoor life going on continuously about him in the day, which greatly relieves the monotony.

I have spoken only of the low grade fevers which are common in tuberculosis. The acute septic complications, such as broncho pneumonia and secondary infection which occurs

are, of course, necessarily treated as acute, with baths, etc., and proper medicine to alleviate the symptoms. Such treatment, however, in a chronic tuberculous case cannot be maintained for any length of time, for if the patient remains in this acute, febrile state, with the serious complication which of necessity must cause it, he will not long remain among the living.

SWEATS.

Night sweats usually disappear entirely with cleanliness. The patient who bathes regularly and who sleeps in a clean bed is bothered to a minimum extent with night sweats. Two drugs, agaracin and atropine, appear to be of material use to treat this symptom, but as a matter of fact, the treatment of night sweats is of very minor importance when the patient is clean.

PAIN.

The treatment of pain in tuberculosis occasionally necessitates most careful consideration. The pain may be from a slight stab-like pleurisy of short duration to a painful chronic pleurisy of months' time.

Tuberculosis is in the main remarkably free from any very demonstrable pain, and usually before a systematic treatment in a special hospital the patient has been unaware of any very material difference in feeling at any particular part of his lung, but after education, a patient who before was unable to localize his lung inflammation is able to do so, because of an appreciable difference in feeling at the inflamed area, but this is not so great as to continually bring to his mind the fact that he is suffering from tuberculosis, but if he has low grade continued pain and pleurisy which is constantly present for days and months, there is nothing more difficult to relieve. The most successful procedures are absolute quiet and chest strapping. Counter irritation at intervals sometimes gives the patient temporary relief.

HEMORRHAGE.

Of the medical accidents I will speak of the treatment of but one—hemorrhage.

Hemorrhage may be from a slight hemoptosis to a huge

hemorrhage of a quart, or fatal area if primary. The explanation of the hemorrhage, is simply breaking through of the wall of the vessel, due to softening and degeneration on account of the tuberculous infiltration, and the vessel wall is held rigidly within the indurated area, and so far as treatment is concerned there is nothing that would have any particular effect upon the size of the opening at the point where the bleeding is occurring.

The rational thing, if possible, would be to actually stop the bleeding point, but as this is impossible, there is one other rational procedure, and that is the reduction of the blood pressure. The two chief drugs which do this with regularity are amyl nitrite and nitro glycerine, and the administration of the one or the other immediately, either by inhalation or hypodermically, is sometimes indicated.

In addition to the pure physics in the treatment to be considered, there are matters for the personal comfort of the patient which also assist in the lowering of the blood pressure—placing the patient at once in a warm bed, heat to the extremities and the administration of a gentle cathartic. Not the least effect of the cathartic is the removal of the necessity for straining at stool at the next bowel movement and thus raising the blood pressure, reopening the ruptured blood vessel, and starting anew the hemorrhage.

The first and the most fundamental point to consider in the treatment of hemorrhage is the psychic treatment, for the patient is usually greatly terrified at spitting his own blood and he must be re-assured. Frequently re-assurance may be all that is necessary, his excited bounding pulse will quiet down, the blood pressure will lower and the hemorrhage will cease without medication, but if there is nothing that can re-assure the patient, and if he threatens to become panic stricken, morphine is the only drug that will relieve his mental strain.

After the immediate treatment of the patient, so far as his psychic and physical condition, has been carried out, the patient must be kept absolutely quiet, according to the size of the hemorrhage, from a period of five days to two weeks, after which, if he has had no recurrence, it is safe for him to exercise to a slight extent.

In the treatment of a case as a whole, the length of time required to secure any kind of a medical result seems to be a

matter of some doubt. It is not infrequent to hear advice given when a patient is sent away to a health resort that six weeks or two months will place the patient in perfect health. Six weeks or two months' treatment at a health resort for a patient who is unable to remain longer on account of lack of funds is certainly very desirable, but not from a treatment standpoint.

A patient who is sent away for this short time will learn what is necessary to be done and will do on returning home, willingly what before he would not have done under most urgent advice. He goes to a place where he sees everybody doing the same thing, and the importance of it needs no emphasis to him. He becomes educated in his capacity for work. He knows more definitely the duration of his disease and the essential treatment and the prominent symptoms, and if he is unable to remain away he returns home with a logical and sane attitude towards his disease.

If, however, a patient is sent for treatment result, six months is the shortest possible time that any expectation of result can be obtained. Patients may get into good condition in shorter time but the possibility of relapse in such cases is very immediate if they return to full work. If the patient has been treated at the best available place, according to his means and case, and has apparently developed the best possible state of health for him with his lung disease, either becoming apparently recovered or arriving at various stages of arrest, the question after treatment comes up very pointedly as to what the patient is to do when he leaves the immediate observation of the physician.

I should like to call your attention to the results of treatment and their definitions as edited by the first meeting of the National Association for the Study and Prevention of Tuberculosis, at Washington, in May, 1905:

Progressive: (Unimproved.) All essential symptoms and signs unabated or increased.

Improved: Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Arrested: Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.

Apparently Cured: All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Cured: All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

The most important problem after treatment for one who has suffered from definite tuberculosis, or is still suffering from it, no matter how slight in extent, is the work problem.

The average course of treatment for the active incipient case is from six to nine months at the present time, and this means that the patient "apparently recovered" has been free from symptoms and from active physical signs for three months before he has passed from observation, but no one who has ever observed a tuberculous process on the surface of the body, where he can see it, will doubt for a minute that twelve weeks is a very short time for the tuberculous inflammation to remain quiet, and a patient who is discharged from the sanatorium in the very best condition possible, medically considered, is still far on the danger side of the disease. His margin of health as compared with a normal individual is greatly diminished, his working ability, so far as his muscular tone is concerned may be at par, but heavy physical labor immediately following a course of sanatorium treatment will undoubtedly very materially assist in the excitation of his old recently healed tuberculosis. He is not able to return to full work but he can do a half job, and the trouble with the work problem for the consumptive is that there are no half jobs, and this complaint does not alone exist among the poor, but it is very distressingly present among those who are moderately well to do and who desire to accomplish a reasonable amount of work in this life and still live a reasonable length of time.

In closing, results of treatment depend largely on diagnosis, and if this is made early and the patient is given or can get favorable opportunity for treatment he can be with honesty and conviction assured that he has a winning fight before him. But successful treatment means the closest co-operation and sympathy between patient and physician, and advice as to method of living must be explicit. The physician must know the exact circumstances of the patient, must outline his prophylaxis, diet, exercise, and work in detail. He must actually inspect the living quarters and give advice as to the room the patient sleeps in, its size, furnishing, windows and walls, and not least—floor. The kind of bed is not too small a thing to talk about—the kind that is most easy to keep clean and to clean under.

A careful attention to all these details will enable three out of four incipient cases to be apparently returned to health, and will improve or arrest a moderately advanced and even an advanced case, and in these latter cases, if not furnishing gratifying and optimistic statistical results, will at least greatly educate the patient, render him a safe member of the community to live with, and return him to a satisfactory *living* state of health.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
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(Continued from March Annals, page 282)

CHAPTER V.

After leaving his wife in the hospital, George Campbell, returned to his desolate home. He was among strangers, having lived in the place but a short time, but sorrow, such as his, could but awaken sympathy, and he did not lack friends.

Little Walter was his constant companion. He would climb upon his father's knee, and ask: "Where is mamma? I want her." The father would answer: "She is sick and she has gone where she will be made well, and then she will come home to Walter." "Will she come in the morning? Won't she be well then?" "Some morning she will be well, dear." Whether the morning would be in time or in eternity, he could not tell. The child ended his prayer, night and morning, with; "Please God take care of mamma, and bring her home;" with childish faith believing, that the kisses he threw, from his tiny finger tips went straight to their destination. Did Angels bear the kisses and the prayers? Who can say?

To the father, the house seemed lonesome and deserted, as though some one was dead. There were Ruth's clothes, that were left at home, her books, and unfinished work. A few months before, they had been happy, not seeing the shadow. It was no time for idle lamentations; he must go on for the sake of his children. He decided to remove with Walter to a neighboring city, where a relative lived who would assist him in caring for the child. Will would have to remain with his uncle for a while, and he must write and tell him what had

happened, and that was hard to do, for his heart was filled with tenderness for his boy away from home. As for Will, he was grieved and disappointed, but he did not then, as in after years, realize how great the trouble was. Hopeful as childhood always is, he thought; "Mother will soon be well and home again." With the companionship of cousins, of his own age, and the thoughtful kindness of his uncle and aunt, he got along very well. Night was the time when he was lonesome and homesick. Then the tears would come, although he tried very hard to be brave. He would wonder what father and mother were doing, and if they were lonesome too, until sleep would end his troubles for the night. The morning would bring a brighter outlook, and new strength for the new day.

As it is not our purpose to follow in detail the lives of the father and children, we will leave them for the present, and return to the hospital.

Weeks passed by, yet we find Ruth still sitting where we left her, the daily routine of her life unchanged, except by what goes on around her, and the wanderings of her troubled brain. She did not leave her seat unless obliged to, and then she returned as quickly as possible. She seldom spoke, and she took no food voluntarily; but was fed twice a day by the physician. Her mind grew more chaotic as the days went by. Nothing escaped her notice, and everything she saw, everything she heard, she was sure had some especial reference to herself. That she was among enemies who were constantly watching her, and who would trouble her in every possible way, she did not doubt. She was constantly talking within herself, and although her lips did not move, and she made no audible sound, she imagined that, not only those around her, but every one in the city, heard what she was saying.

Did you ever try to imagine, dear reader, what it would be to have your thoughts an open book? To those in possession of their senses, it would be far from pleasant; but to Ruth, with her wild delusions it was a terror. Sometimes she was held accountable for the sins of the world. If she did not commit them herself, she was supposed to know who did. The wrong people had been condemned and punished. Then she would picture to herself all her dear ones, captives in the same building with herself, suffering untold sorrows and reproaching her as being the cause.

Directly in front of the lounge upon which she sat was a round, oak table. The bottom of the legs was iron and it was fastened to the floor by screws. Suddenly it entered her mind, as she sat looking at the table, that its flame colored top represented fire. Yes; the great fire in Chicago. What had she to do with that? Evidently, she was supposed to know how it happened. Noticing the four black legs, she thought; "Four black legs must have done it." Then the slippers she wore met her sight, and they gave her to understand that she was concerned in it. From this, her mind soon wandered to the other fires that had occurred nearer home. Dwelling upon the subject, it was soon easy to believe that either she or some of her near friends were charged with setting them all. Every thing yellow, especially oranges, became a sign of fire. Sometimes she felt called upon to account for all the murders that had ever been committed, and an idea once in her mind, it grew until it reached great magnitude.

Hearing the jingling of the attendant's keys, she thought; "They sound like silver, they are saying that I won silver by gambling. They, doubtless, think I have treasures hidden, and wish to know where they are." Sometimes goaded to desperation, she would wildly accept everything, and accuse her dearest friends of the most terrible crimes, talking always in her mute, inaudible way, supposing every word to be plainly understood. In calmer moments, she would repent what she had said, and know it was not true.

For weeks, she really believed that she had untold quantities of gold and silver buried in the ground. Happening to notice her fingers while thinking it over, she at once thought; "I have ten boxes of hidden treasures." She gave directions where they could be found, and made large bequests, giving thousands of dollars to churches and charitable institutions. An orphan's home in which she was interested before her sickness was her special care. She freely offered to provide everything that was needed there, and appointed a widow lady of her acquaintance as matron.

After a while it came to her mind that she had been mistaken, that she had no gold or silver, and she was greatly distressed on account of the trouble the delusion had very likely caused. She had no doubt but that search was being made for treasures, and that all her orders had been obeyed, with the understanding that she would furnish the money needed. About this time a brother

came to visit her, Ruth did not speak to him, only in her silent way. She spent the hour of his visit in trying to make him understand that she had no hidden treasures, and that they must not search for them. He spoke of her children, telling her that Will was living with him, and that he was a good boy and doing well. After he was gone, Ruth remembered his words; but they gave her no comfort, for she thought they were spoken in sarcasm. "Will cannot be doing well," she thought, "when every one hates me so. My children cannot be happy."

In the wall back of Ruth's seat on the lounge, was a small round, iron door about six inches across. Ruth conceived the idea that some one was always on the other side of this door, listening to what she said. In reality, it was used for hose, in case of fire. Sometimes, she imagined that a judge and jury were there, and that she was on trial for terrible crimes, of which she was innocent. One day Dr. Hale, the superintendent of the hospital, passed through the ward with a number of gentlemen visitors. Ruth was undergoing one of her imaginary trials at the time.

Dr. Hale called the attention of the visitors to the hole in the wall, by opening the door. Ruth thought; "They wish me to shut it, to prove my innocence." Jumping from her seat, she closed the door, saying, "I am not guilty."

She could hear voices in the wind, and footsteps seemed to beat time to words so plainly, that she could understand them. The steam whistles were sounded to attract attention to what she was saying. Even the canaries, in their cages, joined in the conspiracy against her; for they seemed to hear her thoughts, and drove her wild, saying, "Ah! Ah! take care! take care!"

Near where she sat, was a large clock, which was a great annoyance to her. Her words seemed to become entangled with the ticking, and she could think, only as it ticked. Sometimes the lounge upon which she sat, seemed to be charged with electricity, and she would be nearly driven from her seat, her spine becoming so stiff that she could not bend her back. Often the side of her face would have a sensation of being paralyzed, coming upon her suddenly and wearing slowly away.

She believed the doctors brought all these troubles upon her, because they wished to torment her. For a few weeks, she dressed and undressed herself; but gradually her troubles overpowered her, and she became almost helpless.

One day in particular brought great suffering to Ruth. In the morning after she was dressed, the attendant led her to a seat in another part of the ward from where she usually sat. "Some terrible thing will happen now," thought Ruth. "Perhaps some great trial is to take place. The Chicago fire! No doubt the building is surrounded by a mob, who are ready to tear me in pieces, if I do not prove my innocence." The idea entered her mind, that, if she swallowed anything, it would be admitting that she was guilty. All day long she sat there, in agony of mind allowing the saliva to run from her mouth, rather than to swallow. The attendants placed towels under her chin, to protect her clothing, saying: "She is demented."

Sometimes her thoughts would take a different turn, and her father owned the building. She thought that he was living there, with her brothers and sisters, and their children. She only, was an outcast. She believed, that the sister that she had supposed dead, was there with the others.

The funeral services that she remembered plainly, were a mock show, intended to deceive her. Just through some large, folding doors at the end of the ward, she would see them all. Summoning all her courage, she tried, one day, to open them; but they were locked. Turning to go back to her seat, she had a strange optical illusion. She saw on the floor at her feet an open coffin; and in it, her sister. She shrank back, crouching in a corner, more dead than alive, until some one led her to her seat, which she did not leave voluntarily for weeks.

One patient, more than any other, she dreaded to have come near her. She was an old lady, with short gray hair, and bright, twinkling eyes. She would sit down near Ruth, and chatter in a sharp voice, sometimes scolding her, and calling her names.

Often, some one read aloud. The books that they selected were very strange, Ruth thought. They seemed made up of disconnected sentences, that had no meaning, and she was sure that they were made to mock the wanderings of her troubled brain.

Weeks glided into months, until the summer had faded into autumn, and autumn had given place to winter, cold and dreary. To Ruth, there were but two seasons, night and day. It would be hard to say which were worse, the days so full of torment, or the weary, wakeful nights. She was quiet now, and the

doctors, thinking that she slept, gave her no opiates. Tied in bed, hands and feet, she would say, over and over again: "I want to sleep the sleep that knows no waking." It was her only prayer. Exhausted, she would lose herself awhile in sleep, only to wake suddenly from wild, strange dreams to wander on again.

Her husband visited her after a few weeks, but went away, sad and discouraged, the physicians, not thinking best that he should see her, fearing that it might make her worse.

And so her life went on, if it could be called living, until one day late in winter, two attendants came to her, and taking her arms, one on either side, they led her out of the ward. Down long flights of stairs, and through other wards they passed, Ruth wondering all the way what new misfortune would befall her. Reaching a hall on the ground floor, known as the sick ward, they led her to a seat and left her.

CHAPTER VI.

A Boston court room presented an unusual scene. The judge, accustomed as he was to sights of sin and sorrow, evidently was puzzled. Before him stood a young girl, not more than sixteen years of age. She did not look like a criminal; indeed, she was charged with no crime. She had been found lying in a back street, in a stupor caused by laudanum, her clothing drenched by the rain which was falling at the time. The police had taken her in charge, and a physician had restored her to consciousness. She refused to give any information regarding herself whereupon she had been taken to the station, and brought before the court for trial. She gave her name as Mary, and the judge might as well have questioned "Topsy," who "never had no mother." She would only say, "My name is Mary."

"Are your friends living?" asked the judge.

"No, sir."

"Where is your home?"

"I haven't any."

"Where have you been staying?"

"Here and there."

"But I wish to know where you last lived."

"I don't like to tell."

"Why not?"

"Because I don't want to go back."

"Were you unkindly treated?"

"You might not think so, but I did not care to stay."

"Who gave you the laudanum?"

"I bought it myself. I got tired of living. There isn't much fun in it."

The bitter, sneering tone in which the words were uttered, was painful in one so young.

"Have you no friends?" the judge continued.

"Yes, but I don't wish to see them. You will send me to them if I tell you."

"But you will have to live somewhere, and it is better to be with friends. It is not well for a young girl to be alone in a large city. I think I shall be obliged to send you where you will be taken care of."

Just then an officer entered the room, and, after exchanging a few words with the judge, he went out, soon returning, followed by a nice, motherly looking woman of middle age. After bowing to the judge, she turned toward Mary. The girl tried hard to appear unconcerned, but when the lady held out her hand, and said, "Mary!" in a pleasant, although somewhat reproachful voice, the hard look left her face and she burst into tears.

Being questioned by the judge, the woman explained that she was Mrs. Maynard, the matron of an industrial school for girls. Mary had been placed there, when ten years of age, to remain until she was twenty-one. "Sometimes," she continued, "when the girls prove themselves trusty and competent, they go out to service in families, pains being taken to secure good places for them. They usually like to go, as their wages are their own. We keep ourselves informed in regard to them, and when necessary, we take them back to the home. Receiving word from Mary's employer that she was missing, I have, with the help of the police, found her here."

The judge listened attentively, and, when Mrs. Maynard had finished speaking he gave Mary a few words of advice, and dismissed her to go with her friend, which she willingly did.

But little was said on the way home, Mrs. Maynard thinking best to wait until Mary was in a different mood. When they

arrived home, she was given a bath, clean clothing, and dinner, then left alone to rest.

A reform school. The words have a harsh sound, and the young inmates are looked upon as hardened specimens of humanity, shut away by themselves where, possibly, they may learn to be good, and if not, they will be kept from doing harm to the world at large.

Oh, world at large: Life is a reform school, and we are all scholars. The children shut away, are where we cannot harm them. Doubtless this school for girls, was a better home than some of them had known before. Every room was clean and orderly, convenient and comfortable. The inmates had plenty of food which was wholesome, although not dainty. They were allowed so many hours for study, so many for work, so many for recreation, and the remaining time for sleep.

Mrs. Maynard was like a mother to them so far as she could be, but each child needs a mother of its own. Then there were the bolts and bars. In a land of freedom they were not free. Their play-ground was enclosed by a high fence, over which they could not climb. They could not make their little plans, what they would do to-day or to-morrow. Every thing was planned for them. We can only think with tender pity of the young inmates of these institutions.

That evening Mrs. Maynard called Mary to her room, and bidding her to a seat by her side, she asked her to tell why she had left the place where she had worked.

"My mistress did not like me," Mary answered.

"Why do you think so?"

"Oh; I could tell! I never done anything that pleased her. I couldn't carry in the wood, or put it in the box right, and I couldn't sweep clean enough to suit her. If I hurried, she said I was noisy; and if I didn't, she said I was slow. No matter what happened, it was laid to me because I was a reform school girl."

"That was all very wrong; but why did you not come to me? I might have found a better place for you. It was very wicked and foolish for you to try and end your life, because your mistress was unkind."

"Well, that wasn't all," said Mary sullenly, "I'm so big and fat, the boys laugh at me and call me 'Jumbo.' It's no use trying to be good with every one laughing at you."

"No one that is sensible will laugh at you, Mary. You are healthy and strong, you have a good face, and you are not deformed in any way. Be thankful for that."

"I'd just as soon be hunch-back as to be bigger than any one else. You are not like me, and you don't know how dreadful it is. There's no use talking. I don't want to live any longer."

"But you will have to, Mary, you have your work in life to do, and if you do it patiently and well, you will be happy, whether you are large or small."

"I guess there are enough to do all the work without me, and no one outside will want me."

"You must make them want you, Mary. Listen: If you were hungry and some one fed you, if you were cold and some one clothed you, if you were in trouble, friendless and sorrowful, and some one spoke kind words of comfort to you, would you look to see if that person were large or small? Would it matter to you whether the features were plain or beautiful? You would see the beautiful spirit, and love the giver for his kindness."

"But I have nothing to give. No one is poorer than I."

"Kind words and acts are better than money, and I can tell you of another way to help others, and that is by self-restraint. When you give way to your despondent feelings, or get into a passion, you not only add to your own burdens, but you trouble others, who, perhaps, have burdens of their own to carry. I will tell you something, Mary, that was written by a wise and good man.

"The troubles of one year are like a great bundle of sticks, too large to lift; but we are not obliged to carry them all at once. We have one stick to carry to-day, another to-morrow, and so on. This, we might easily do, but we increase our troubles, by carrying yesterday's sticks over again to-day, and adding to-morrow's burden to our load before we are required to bear it."

"Now, Mary, you must try to do each day's work, the best that you can, and I am sure, if you seek for strength to bear, it will be given you. I hope the way will be made smooth for you." The matron then dismissed Mary with a kiss.

When the bell rang for evening devotions, Mary joined her mates. She tried to listen to the reading and the prayer, but her mind wandered away. She was carrying yesterday's sticks over again. She did not join in the hymn, as formerly she had

loved to do, and when the services were over she went silently to her room. She remained awake a long time that night. She remembered what the matron had said to her. "It was very nice talk," she thought, "but who cares for me? I'm different from the rest. Their folks come to see them, and send them nice things, but I'm all alone. I wouldn't mind so much if I was like the others. I shall have to stay here all the time now. They won't let me go out to work again."

When, at last, she slept, she dreamed her troubles over again, and just as her mother, whom she had not seen before, was leading her into the light, she awoke.

The next day Mary was given work to do, and lessons to learn. When play-hour came, she was allowed to join the other girls.

In one corner of a large field which joined the building grew some old apple trees, whose branches nearly reached the ground. This was a favorite place of resort with the girls, and, this afternoon, quite a number, among them Mary, went and sat beneath the trees. She joined but little in their talk, and sat idly pulling the grass beside her. After a while she strolled away by herself, and, finding some poisonous ivy near the wall, she pulled it and rubbed the leaves over her face and hands, so silly that she did not attract attention.

(To be continued)

Clinical and Pathological Notes

Acute Thyroid Intoxication as a Sequel of Typhoid Fever. By

SAMUEL B. WARD, M. D., Albany, N. Y.

Mrs. K., an American, thirty years of age, was delivered on January 11, 1908, of a healthy child, which is still living and doing well. The delivery took place during an attack of typhoid fever, which ran its usual course.

The temperature became normal on February 9th, and remained so until about the 15th. On that day her temperature rose to 101.2° at 8.00 p. m., on the 16th to 104° at 4.00 a. m., and dropped back to 101° at 8.00 p. m., and the next day to about normal again, where it has remained ever since.

The rise in temperature was preceded by a remarkable variation of the pulse rate.

On the 12th the pulse dropped to 84.

On the 13th the rate was 120 at midnight, 82 at 4.00 a. m., 120 at 8.00 a. m., 84 at 4.00 p. m., and 112 at 8.00 p. m.

On the 14th the pulse rate was 120 at 4.00 a. m., and 136 at 8.00 p. m., rising steadily during the day.

On the 15th it fluctuated between 144 and 152.

On the 16th at 4.00 a. m., it was again 152 and the same at 8.00 a. m. At noon it dropped to 140 and fell steadily during the day to 112 at 8.00 p. m.

On the 17th it was 120 at midnight, 100 at 8.00 a. m., 12 m. and 4.00 p. m., and 108 at 8.00 p. m.

On the 18th it fell to 92 and has shown no marked fluctuation since.

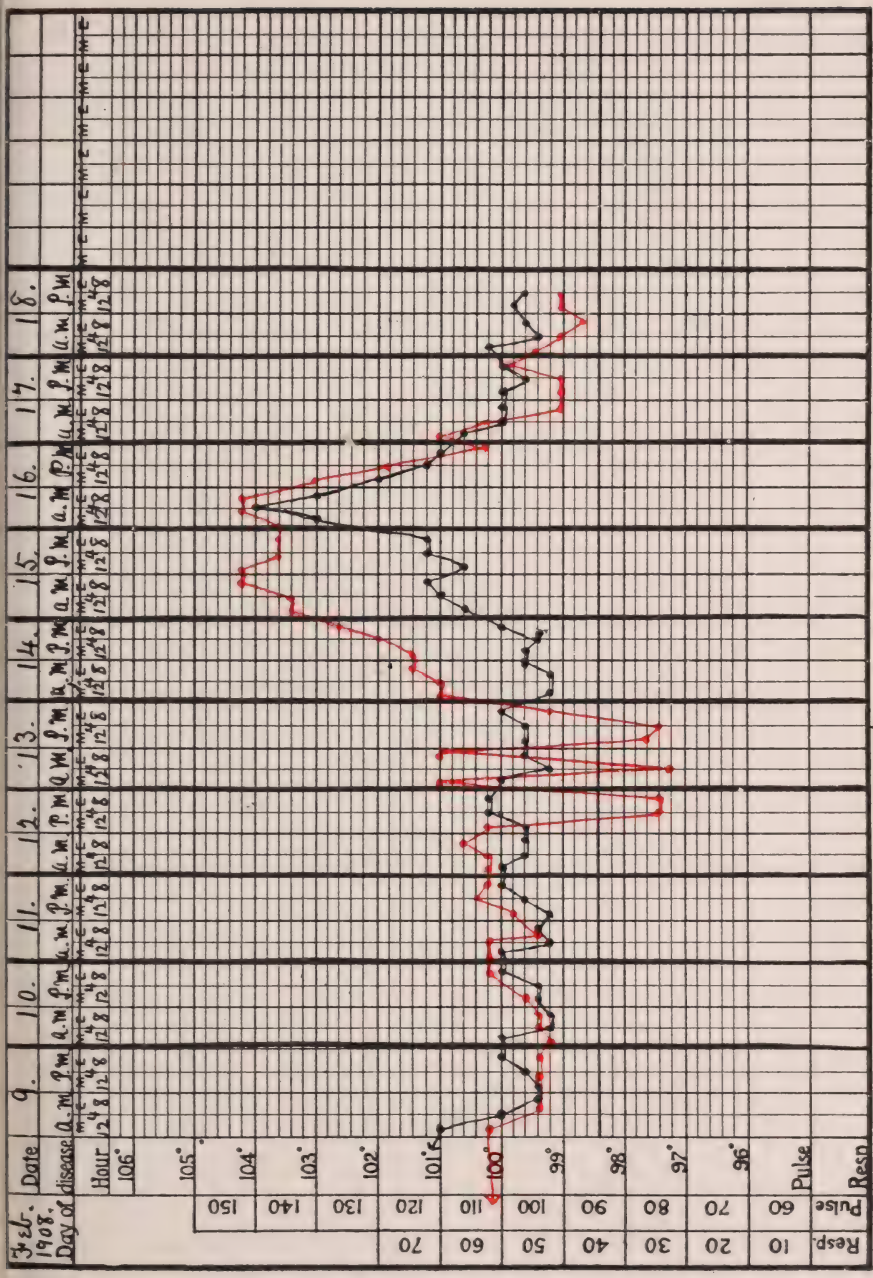
During the period of fever and rapid pulse there was nothing noticeable in the general condition of the patient, except that the thyroid gland became suddenly and greatly swollen; that it was tender on pressure; that there was some pain on swallowing; that there was distinct bulging of the eyeballs, and marked tremor, nervousness and motor restlessness, accompanied by nausea and vomiting. The swelling was distinctly perceptible on the whole day of the 16th; but it had disappeared again on the morning of the 17th, and the other symptoms passed off at the same time.

It seems to us that this was an unusual case of acute thyroid intoxication.

Osler's "Modern Medicine" speaks of thyroiditis as a not uncommon sequel of typhoid in some localities, and abscess has been known to follow, one such case being reported in the *London Lancet*, January 25, 1908, by Melandri and Legg, and the subject is more fully discussed by Keen, in his "Surgical Complications and Sequels of Typhoid Fever." The enlargement of the thyroid in this case lasted less than forty-eight hours in all, which is too short a time for a true inflammatory process. It must have been only an acute congestion of the gland accompanied by hypersecretion.

The only remaining doubt about the case is whether childbirth, which is a well-recognized etiological factor, could have been responsible for the production of this condition. It seems to us that the acuteness and short duration of the attack, with the attendant high temperature, renders it much more probable that it was a sequel of the typhoid.

I am indebted to Dr. A. J. Blessing of this city, for the opportunity of seeing the patient in consultation.



Editorial

Elizabeth's aversion to physic-taking formed one of her peculiar characteristics; the more remarkable since she was, notwithstanding her pertinacity in concealing her ailments, not infrequently indisposed. Her reasons were cogent for her antipathy to medicine, for whilst other sciences progressed rapidly in her century, that of physic remained in a crude and barbarous state. Her courtiers, who loved to see their outward persons bedizened with gold and pearls, thought doses of the same would infinitely comfort and refresh the interior. In a contemporary letter, Sir Charles Cavendish regretted he could not send some of his favorite nostrum, Salt of *gold*, to old lady Shrewsbury; and notices that "the *pearls*, ten grams, are to be taken fourteen days together; as to the *coral*, Sir Walter Raleigh saith he hath little left."

An ounce of magnesia would have done them more good, medicinally, than all the pearls and coral in the Red Sea. But such were the prescriptions administered **to the great in the sixteenth century**, while the poor and the middle classes, who sighed in vain to swallow the pulverized pearls and pounded diamonds **with which their betters regaled themselves**, were forced to rely on the traditional merit of native herbs, and simples gathered, with potent charms, in proper planetary hours; and certainly notwithstanding the latter-named superfluities, their share of the healing art was the most efficacious. No wonder the queen's strong judgment and acute perceptiveness made her repudiate the physic, prescribed in accordance with her regal state, and trust to nature; she thus happily avoided doses of gold, pearls and coral.

AGNES STRICKLAND.

The Life of Queen Elizabeth



On February 6, 1908, occurred an event at the Willard State Hospital, Willard, N. Y., which brought into view an interesting and important matter of history. On that day was presented to the hospital a portrait in oil of Dr. John B. Chapin, a member of its building commission, and its first medical superintendent.

Some three years ago the friends of Dr. Chapin united to give him an honorary dinner in Philadelphia in commemora-

A Chapter in
the Care of the
Insane

tion of fifty years of continued service in the interest of the insane, and as part of this anniversary portraits were presented to the Pennsylvania Hospital for the Insane, to the Willard State Hospital and to Dr. Chapin's family. In the address which Dr. Chapin made at Willard he referred to the plan of inception of that hospital, and in this accurate sketch revealed how great a departure was made from existing ideas of construction and administration. It is not too broad a statement to make that opinions regarding not only institutions for the insane, but for all classes of dependents have been revolutionized by the Willard State Hospital. It has been found that large numbers may be managed under one administration provided they are placed in properly classified groups in small separate buildings, rather than congregated in one large structure. At Willard an excellent farm was secured and the cottages for the patients were scattered about this farm so that those who were able to work in the gardens and grounds were given an opportunity. After forty years of occupation the Willard State Hospital is a model of comfort and contentment and in every way justifies the great conception under which it was launched.

In 1843 the State Hospital at Utica was opened and this was the only State provision for the insane prior to the opening of the Willard Hospital. The agitation for more State accommodation was begun by superintendents of the poor of the State in the convention in 1855. The matter was urged in the State Medical Society by Dr. Charles A. Lee and Dr. George Cook, and a resolution of the State Society and an investigation as to the condition of the insane in the County Almshouses was carried out under the direction of Dr. Sylvester D. Willard of Albany, the Secretary of the Society.



<p>A</p> <p>Complimentary</p> <p>Contemporary</p>	<p>The Boston letter of the <i>Springfield Republican</i> of March second, deals in so complimentary a way with the ALBANY MEDICAL ANNALS that a reproduction in part of its comments will be justified by the readers of the ANNALS on the ground of pardonable pride. The stimulus to the laudation of the ANNALS and of Medical Albany appears to be</p>
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the serial story now running in the ANNALS under the title of "The Guest." The Boston correspondent is attracted by the classical cover of the ANNALS, and as his exordium, deals with this in the following language. It is the first time the modest scrap of Greek has been converted into English rhyme, and such a touching rendition is another evidence of the beauty and possibilities of the Attic tongue.

"An ambitious, and for the present a very useful monthly has lately come to me for notice,—the ALBANY MEDICAL ANNALS, now in its twenty-ninth year,—dating back, that is, to about 1880. It bears a Latin seal, which mentions a 'Concord University' somewhere,—presumably in Schenectady, being Union college,—and an Albanian college of medicine, which is certainly at Albany, if anywhere, with the date, 1873. Beneath is a Greek inscription which seems to say:

Unshaken and firm-set be thine abode!
Light out of dark to see,
In sickness, health, by thee
Be still bestowed!

But alas! "*ἔμπεδον*" means 'not only 'firmset' but 'fetlocked,' and is so used by Lucian; and whether medicine is best described as fixed or advancing may be a question. Seldom is the bulk of the medical profession foot-loose and free to follow progressive science; it is only the few men of genius in their ranks who are not fetlocked to some tradition or whim. Defoe's description of his pillory was not so bad,—

A hieroglyphic state machine
Contrived to punish Fancy in;

and the doctor of medicine who really leads his brethren does often, for years, find himself in a professional pillory, with learned M. D.'s casting superannuated eggs and the cabbage-stalks of their moldy cellars of tradition at his instructive head. If the Albany Medical College has got beyond this ordinary stage of the empirical art, let it thank heaven and use the daylight while it lasts.

"These ANNALS seem to indicate that a broad streak of daylight does now illumine the region of Albany, where a 'psychopathic hospital' has for some years been functioning in a sensible way, to improve the earlier stages of insanity, before the darkness settles down unbroken upon the disordered mind. Dr. Blumer's short biography of Sydenham

indicates that medical reformers are honored at Albany,—at least after 230 years; and we may infer that Dr. Worcester's and Dr. Putnam's novel clinics in Boston are not so much pooh-poohed in Albany as in New York City. But the peculiarity of the February ANNALS is that it begins the publication of a most illuminating story of the inside of a lunatic hospital, by a former patient at the 'New Worcester' who calls herself 'Ruth Campbell' and mingles a little fiction with her actual experiences. The little book which lies before me in its proof-sheets, and seems likely, at the rate of publication for last month, to run through a whole year of the ANNALS, deserves a wide reading, with some toleration for the diffuse style in which its confessions and revelations are couched. It is seldom indeed that physicians at the head of asylums give a clear and fair account of the daily scenes which they witness, with eyes often of experience,—perhaps as often with delusions as wide of the fact as are those of their patients.

* * * * *

"The care taken by Dr. Flood in this case has often been paralleled by persons of humbler station and less publicly known. I have more than once dwelt on the success achieved by Miss Cooke of Sandwich with cases not so fortunately circumstanced as Ruth's. In my life of Dr. Howe, published in 1891, after my return from those scenes in Greece where he first displayed those constant traits of insight and good sense which made him the typical Massachusetts philanthropist, this passage was cited, in a note to the page in which Howe's paternity of the family-care system was recognized,—and it still seems to me to point out the secret of success in hopeless cases:

"A rural poet, observing what had been done by Miss Cooke, printed some lines which well describe in a plain way, the natural magic of women who understand how to deal with their demented and bewildered sisters:

Her gift once found, she made it much her care
To soothe and tame the wildest creatures there;
Pleased they beheld, even with their frenzied eyes,
Her tender ways,—their solace and surprise;
Her courage calm when anger, true or feigned,
Threatened the blow that her strong hand restrained;
Her diligent labor at each menial toil,
And that wise lamp that never lacked for oil.

The fixed and haggard look grew soft and mild
 In those sad faces, and once more they smiled;
 Slowly their fashions strange were put aside,
 Checked the loose tongue, the unwonted labor tried,—
 With awkward zeal, and such as love alone
 Could show — or bear — they made her tasks their own.

“ I will neither quote from the two chapters of ‘ The Guest ’ yet published in the ANNALS, nor from the later chapters before me. Let the story be read in its connection; it is well worth the trouble. Perhaps some comment on the real facts might well be made as the chapters go forward; but every one unhappily familiar with the unavoidable scenes of such asylums will recognize the general truth of the picture. It will be painful reading to many; but useful on the whole, and may do something to teach the uneducated and the over-educated what insanity and its care actually are.”

Little Biographies and the Eponymic Diseases

XXVII. DOMINIC JOHN CORRIGAN.

SIR DOMINIC JOHN CORRIGAN, Bart., M. D., was born on the first day of December, 1802, and died on the first day of February, 1880. This much at least there is no dispute about. On the other hand there is so wide a difference in what we read about him that the careful biographer must consider both *pro* and *con*.

Inasmuch as the commendatory notices appeared immediately after Corrigan's death, and as they are many more, in number than the uncomplimentary ones, which appeared at a later date, we will consider them first.

“ It is given to few men to become classic during their lifetime, but of this number, Sir Dominic Corrigan undoubtedly was one.” Corrigan's father was a “ merchant of repute,” living on Thomas street, Dublin, where Sir Dominic was born. He studied at the Lay College of St. Patrick at Maynooth, and later was apprenticed to Dr. O'Kelly of the same place, later attending lectures in Medicine at Edinburgh University, from which he graduated in 1825, in the same class with Stokes. He at once settled in Dublin, becoming medical attendant at a dispensary where he made his first clinical observations. He so “ earnestly

pursued the study of pathology," that in 1832 he was in a position to "present an article entitled, Permanent Patency of the Aortic Valves." "This masterpiece attracted universal attention at home and abroad, and although Hope and others wrote on the subject about the same time, the credit of having given the first clear, complete, and accurate account of the disease belongs to Corrigan. So highly was the work esteemed abroad, that Professor Trousseau, conferred on the disease the name of 'Maladie de Corrigan,' and Stokes, in his classical work on 'Diseases of the Heart and Aorta,' observes: 'We owe the diagnosis of this disease (permanent patency of the aortic valves) to Dr. Corrigan.'" Corrigan relates that about this time many advised him to resort to various devices to make himself famous: Some counselled charitable bazaars, and afternoon teas; others that he should get himself called away from church and other public places on "urgent business;" still others urged his driving at a furious rate through the streets. Such advice from men called leaders in the profession inclined him to regret his having chosen medicine as a calling, but he persisted in steady study and hard labor until success was his.

About this time he was connected with several hospitals, was, through jealousy, blackballed at an election for Fellow to Queen's College of Physicians, but later he became its president, holding this position for five terms. He lectured at the Carmichael School of Medicine, was Vice-Chancellor of Queen's University, received the degree of Doctor of Medicine, (*honoris causa*) from the University of Dublin and was physician in ordinary to the Queen. He represented Dublin in Parliament from 1868 to 1874, where he was a "useful and distinguished" member. He wrote a remarkable course of lectures on "The Nature and Treatment of Fevers," a memoir on "Famine and Fever as Cause and Effect in Ireland," a description of "Cirrhosis of the Lung," and a book entitled "Ten Days in Athens," which, by-the-way, deals almost entirely with a journey through France and Italy to Greece and scarcely at all with Athens. The cause of his death was apoplexy.

The above is the estimate of Corrigan by his colleagues and contemporaries, now let us view him in the perspective, and note the difference, even as to the importance of his paternity.

He was the son of Corrigan, a *small tradesman* of Dublin, who lived on Thomas street, "a squalid thoroughfare leading out

of Dublin to the South of Ireland." After struggles of no small magnitude, his ambitions were gratified and he was elected to parliament, in which he represented Dublin from 1870 to 1874. He had no knowledge of politics and failed to command respect or attention, retiring a disappointed man.

"As a physician he has received more praise than is his due." He has been spoken of as the discoverer of the form of valvular disease of the heart, known as aortic regurgitation, and as the first describer of the peculiar pulse which accompanies it; but Corrigan's paper on 'Permanent Patency of the Aortic Valves' was published in the *Edinburgh Medical Journal* for April, 1832, while the disease had been described more fully by Hodgkin in 1827 and 1829, and the pulse by Vieussens in 1715. His paper shows that he had made some observations, but he cannot have made many, for he remarks that 'assurance may be given against any sudden termination,' while the fact is that this form of valvular disease is the commonest morbid appearance associated with sudden and immediate death, and the patients suffering from it are liable to death at any moment. His success was due to his good sense and large practical experience, but he was neither a profound physician nor a learned one. He had received little general education and had no knowledge of the writings of his predecessors, but he was the first prominent physician of his race and religion of the majority in Ireland, and the populace were so pleased with his success, and spread his fame through the country, "so that no physician in Ireland received so many fees as he had."

It is not within the province of the writer to decide who was right; whether Corrigan was god or devil, but it is impossible to close without calling attention to the close resemblance between the case of Corrigan and that of many of members of our profession who are much in the public eye at the present time.

SPENCER L. DAWES.

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Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR FEBRUARY, 1908.

Deaths.

Owing to the great amount of work required of the clerks in the Bureau of Health at this time, it has been impossible to make an abstract of the deaths for the month of February. This abstract will appear in the March report in the next issue of the Albany Annals.

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were 127 inspections made, of which 66 were old houses and 61 new houses. There were 32 iron drains laid, 4 connections to street sewers, 5 tile drains, 18 cesspools, 38 wash basins, 41 sinks, 30 bath tubs, 29 wash trays, 1 butler's sink, 55 tank closets, one slop hopper. There were 61 permits issued, of which 52 were for plumbing and 9 for building purposes. There were 16 plans submitted, of which 6 were of old buildings and 10 of new buildings. There were 2 houses tested on complaint with peppermint and there were 15 water tests. 36 houses were examined on complaint and 36 were re-examined. 23 complaints were found to be valid and 13 without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid Fever.....	5	4	1	13	5
Scarlet Fever.....	12	6	22	5	75
Diphtheria and croup.....	16	4	7	41	22
Chickenpox.....	5	8	8	3	7
Measles.....	7	66	2	16	145
Consumption.....	0	0	0	12	32
Totals.....	45	88	40	90	286

Contagious Diseases in Relation to Public Schools.

	<i>Reported</i>		<i>Deaths</i>	
	D.	S. F.	D.	S. F.
Public School No. 1.....	..	2	..	..
Public School No. 2.....	1	..	..	..
Public School No. 5.....	..	2	..	..
Public School No. 6.....	1	1	..	..
Public School No. 8.....	..	4	..	..
Public School No. 9.....	..	1	..	..
Public School No. 10.....	..	3	..	..
Public School No. 12.....	..	1	..	..
Public School No. 14.....	..	6	..	..
Public School No. 15.....	..	3	..	..
Public School No. 17.....	..	1	..	..
Public School No. 10.....	..	1	..	..
High School.....	..	2	..	..
Albany Business College.....	1	..	..	..
Academy of Sacred Heart.....	..	1	..	..
St. John's School.....	..	1	..	..
Lady Help of Christians.....	..	2	..	..
Lady of Angels.....	..	1	..	..
Cathedral School.....	1	..	..	..

Number of days quarantine for diphtheria:				
Longest.....	34	Shortest.....	9	Average..... 18 3-5
Number of days quarantine for scarlet fever:				
Longest.....	38	Shortest.....	14	Average..... 25
Fumigations:				
Houses.....	60	Rooms.....		129
Cases of diphtheria reported.....				22
Cases of diphtheria in which antitoxin was used.....				21
Cases of diphtheria in which antitoxin was not used.....				1
Deaths after use of antitoxin.....				3

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive.....	17	2	2	32	14
Initial Negative.....	65	9	12	54	77
Release Positive.....	7	0	3	123	42
Release Negative.....	9	3	4	222	106
Failed.....				25	2
Totals.....	98	14	21	456	241
Sputum for tuberculosis:					
Initial Positive.....		3	0	7	8
Initial Negative.....		1	5	6	11

MISCELLANEOUS.

Inspection of mercantile establishments.....	0
Mercantile certificates issued to children.....	8
Factory certificates issued to children.....	3
Children's birth records on file.....	11
Number of written complaints of nuisances.....	44
Privy vaults.....	9
Plumbing.....	20
Other miscellaneous complaints.....	15
Total number of dead animals removed.....	575
Cases assigned to health physicians.....	112
Calls made.....	574

BUREAU OF MARKETS AND MILK.

Milk dealers found to be out of business.....	0
Wagons and milk in clean condition.....	13
Wagons and milk in unclean condition.....	0
Ice on cans.....	0
Butter fats below 3%.....	0
Butter fats from 3 to 3.5%.....	0
Butter fats from 3.5 to 4%.....	11
Butter fats over 4%.....	2
Solids below 12%.....	0
Solids from 12 to 12.5%.....	1
Solids from 12.5 to 13%.....	8
Solids over 13%.....	4
Market re-inspections.....	105

BUREAU OF MILK.

No.	Specific Gravity	BUTTER FATS.			SOLIDS.			Over
		Under 3%	3 to 3.5%	3.5 to 4%	Under 12%	12 to 12.5%	12.5 to 13%	
192...	33.7	..	..	I	..	..	I	..
78...	30.6	..	..	I	..	..	I	..
128...	32.6	..	..	..	I	..	..	I
180...	32.1	..	..	I	..	..	I	..
51...	33.1	..	..	I	..	..	..	I
184...	34.1	..	..	I	..	..	..	I
20...	33.7	..	..	I	..	..	I	..
179...	32.2	..	..	I	..	..	I	..
112...	30.0	..	..	I	..	..	..	I
119...	31.1	..	..	..	..	I	..	..
146...	32.1	..	..	I	..	..	I	..
144...	32.1	..	..	I	..	..	I	..
11...	30.6	..	..	..	I	..	I	..

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A regular monthly meeting of the Medical Society of the County of Albany was held Wednesday evening, February 5, 1908. Meeting called to order at 9:00 p. m., Dr. Lempe in the chair.

The following members were present: Drs. Applebee, Bedell, A. J., Beilby, Blair, Boyd, Classen, Conway, Craig, Curtis, De Voe, George. W. H., Giffen, Goeway, Guttman, Hacker, Harrig, Herrick, Holding, Keens, Kreiger, Lempe, McHarg, MacFarlane, C. H. Moore, J. M. Moore, Mos-ton, Munson, Murray, O'Leary, G. W. Papen, Sr., G. W. Papen, Jr., Reynolds, Root, Ryan, Skillicorn, Stevenson, Traver, Wiltse, Winne.

It was moved and seconded that the minutes of the last meeting be adopted as printed in the ANNALS and as approved by the individual members. Seconded and carried.

Dr. JOSEPH D. CRAIG, Health Officer of the City of Albany, then opened "The Discussion on Tuberculosis, Its Sanitation and Hygiene."

Dr. HERBERT D. PEASE, Director of the State Hygienic Laboratory, who was to explain to the Society "The Method of Demonstration of the Exhibit," was unable to be present, owing to illness.

Dr. WINNE spoke of the work being done by the Albany Guild which had organized a Tuberculosis Committee, the nature of whose work was copied after that planned by Dr. Pratt. There are, he said, a great many people, and particularly the dispensary class, who are unable to go to sanitoriums, either because of lack of means or unwillingness to leave home, or perhaps their cases are not suitable for sanatorium treatment. Pratt's idea was to simply try and give these patients sanatorium treatment in their own homes and so arrange their other affairs that they would take absolute rest. If a flat roof were accessible the patient sleeps on the roof; if not on a roof, a piazza; if neither was obtainable, to build

a tent in the backyard. The results in Boston have been very satisfactory, as shown in the reports given from time to time. This scheme was started here on the 1st of November last. Dr. Winne then spoke at length of the efforts of the Guild in behalf of the patients here in Albany, and said that the Guild would not care for patients who had physicians of their own unless authorized to do so by said physician. One patient is sleeping in his backyard; the other men sleep in tents, and the outfits which were furnished to the patients, inclusive of tent floors, cost twenty-four dollars. If the patients can afford to pay they furnish their own outfits, or they may partially pay for them. The Guild does not furnish these outfits gratis, as it has enough on its hands without going into the financial side. When necessary appeals are made to churches, societies and upon anyone who can be relied upon to help. Dr. Winne then briefly told of the results obtained, of the improvement noted in the patients' health, gains in weights, etc.

There are a number of physicians in the room who have charge of patients from whom they do not make anything themselves financially and have no particular reason for keeping them. Ofttimes these physicians have cases that could be benefited by rest, if they could get it, but the doctors are not going down into their own pockets to meet the expenses. The Guild is in a position to go to certain individuals, churches, societies and organizations, and seek help for these unfortunate individuals. If the patients are actually poor they are asked to pay only twenty-five cents a month, or at the most one dollar. They are simply charged such sums that they may feel that they are paying something and are not charity patients.

Dr. BOYD spoke of the signs exhibited in London, prohibiting spitting, adding that he would not mention the fine imposed as a penalty. He said that he was much impressed with the map of the city and the position of the pins thereon, and spoke of the great number of deaths that occurred in the densely populated sections and along the river fronts of Troy and Albany. Dr. Boyd said that in his opinion the various societies interested could disseminate knowledge far better than the physicians could.

Dr. HACKER spoke of the work of the medical inspector in Los Angeles, who inspected the buildings, condemned them and ordered them to be corrected; that he also inspected the slabs in the Bacteriological Laboratory at the University of California and condemned them because they contained cracks that were like ravines harboring organisms. He said that it struck him that we had a great deal to learn from the West. It seems men can be permitted to put up any kind of a building, whether it be for manufacturing or living purposes. The building of houses close together with an airshaft and no sunlight struck him as being a matter that demanded attention. He said that he tried to comply with the requests contained in Dr. Craig's circular letter, and felt that the Health Officer of the city was embarrassed in not having sufficient money. The money expended each year for the Fire and Police Department parades, as well as the Fourth of July celebration, could be used to far better advantage if it were expended in fumigating houses. He believed that

houses should be fumigated after removal from one house to another, the same as if death had occurred. He then spoke of his endeavors to have patients accepted by the various sanatoriums, and asked what the State means by "incipient" tuberculosis.

Dr. Root said that the question of expectoration, its danger and how best to check it, is a matter of great importance. Many people spit because they do not realize its danger; they do it because it is a habit. Americans are looked upon by Europeans as a spitting nation. In foreign countries we do not see cuspidors except in places frequented by Americans. Let a man go up State street and avoid stepping on a place that is not marked by expectoration, and he will find that his progress will be most difficult. Dr. Root likened this to a game the children play, that of walking along the street and not stepping on a crack. It is not many years ago that the streets of this city were not swept at all, unless one got out and swept his own portion. This dirt was not collected at all but was allowed to scatter. The streets are swept to-day but they are swept badly. No reflection is made on the Health Department, which is doing a great deal considering the funds at its disposal. But Albany has the most absurd way and the most absurd time of sweeping its streets. State street, the great thoroughfare of the wage earner, is swept at six o'clock and is enveloped in clouds of dust just when these working people are compelled to walk along it on their way home from work. Tuberculosis and filth are almost synonymous; sunlight, fresh air and cleanliness are our greatest remedies. He also said that he had very little respect for the man who happens to be possessed of some of this world's goods, who accumulates real estate in the old and more or less deserted districts of this city, formerly most of them old residences, and then turns that old residence originally designed to shelter one family, into a tenement house rented to numbers of people, pays no attention to plumbing, hot or cold water, ventilation and heating, turning that property over to a real estate Shylock, so that they do not feel the suffering and collect their revenue at long range. They probably never see their property, never go into those tenements and see conditions, consequently they do not know of the suffering. Dr. Craig knows that there are many buildings that appear all right from the front, but after investigating the interior you wonder why the occupants do not all die. It seems, he continued, that it is not only necessary to talk to the people who live in such houses but to the owners, so that they may provide better accommodations. He spoke of the modern tenement houses built by Mr. Peabody.

Dr. MacFarlane said that he thought we were beginning to appreciate more and more the importance of segregating, or at least keeping under official observation, cases of tuberculosis. If, he said, we could only make the public understand that spitting, under any and all considerations, is a filthy habit, and tuberculosis is a danger to the community, in twenty-five years we could reduce the number of cases nine-tenths. Dr. MacFarlane then spoke of the embarrassment one felt while riding on a street car if all the passengers stared at one's feet. If when a man expectorated on the floor, why would not it be a good plan for everybody in the vicinity to

stare at him as if he were a dangerous man—a nihilist concealing a bomb? We might in this manner be able to accomplish a great deal, and believed this could be done by concerted public action. He also felt the hands of Dr. Craig should be strengthened as far as possible in this matter; that it is a disgrace to any community not to give its health officer sufficient funds to carry out the necessary and practical work in regard to this frightful scourge. He spoke of the importance of fumigating houses, and especially the room occupied by a patient suffering from consumption. Germs, he continued, live much longer in dark places, and children living in tenement houses which had not been disinfected were in great danger of contracting this dread disease. Dr. MacFarlane added that he thought it would be wise to give Dr. Craig as much money as he wanted and could legitimately use in preventing this scourge.

Dr. SKILLICORN said that the whole subject is merely the control of expectoration. Years ago it was the belief that tuberculosis was due mostly to milk, as it had been proved that tuberculosis very rarely came from milk. He spoke of compulsory reporting of such cases to the Health Board, and that after receiving these reports the properly constituted authorities should visit these patients and teach them the dangers of expectoration. A violation of this could be made a misdemeanor. The penalty, of course, would not be enforced, but at the same time it would impress the patient with the importance of protecting the public. Dr. Skillicorn said that he did not think these cases could be reached in any other way.

Dr. CRISPELL, Medical Expert of the State Department of Health, spoke of the purposes of the exhibit, saying that it was the desire of the State to disseminate knowledge as to the means of avoiding the dread disease, and to teach those who have tuberculosis the necessity of carefulness on their part to prevent the spread of the disease. Referring to the question of Dr. Hacker as to what an incipient case of tuberculosis is, Dr. Crispell referred him to the definition adopted by the National Society for the Prevention of Tuberculosis as being the standard required for admission to Raybrook by the official examiners. Dr. Crispell urged the members of the Society to exert themselves to the utmost in an endeavor to establish a hospital for the care of those suffering from tuberculosis in this city. He felt that such an institution could be erected and maintained if the physicians of Albany would lend their aid. Dr. Crispell then spoke of the excellent results obtained at Raybrook. He deplored the fact that unless more money was appropriated, the Exhibit, which was doing such good work in the way of spreading knowledge, would have to be abandoned.

ARTHUR J. BEDELL, *Secretary.*

GEORGE G. LEMPE, *President.*

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD, DEPARTMENT OF VISITING NURSES—STATISTICS FOR FEBRUARY, 1908. Number of new cases, 154; *Classified as follows*: Dispensary patients receiving home care, 4; district cases reported by health physicians, 18; charity cases reported by other physicians, 73; moderate income patients, 59; old cases still under treatment, 85; total number of patients under nursing care during the month, 239. *Classification of diseases* (new cases): Medical, 49; surgical, 6, gynecological, 4; obstetrical, 73 mothers and 14 infants under professional care; dental, 2; eye and ear, 1; skin, 5; number of contagious diseases in the medical list, .9; removed to hospitals, 6; deaths, 15.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; medical students in attendance, 4; Guild nurses, 7; patients, 5; visits by students, 33; by the Guild nurses, 36; total number of visits for this department, 69.

Visits of Guild Nurses (all departments): Number of visits with nursing care, 1,611; for professional supervision of convalescents, 271; total number of visits, 1,882. Cases were reported to the Guild by two of the health physicians, by forty-one other physicians and by one dentist. Nine graduate nurses and four assistant nurses were on duty.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on April 18, 1908, for the following positions: Assistant to Chief Engineer, Public Service Commission, First District, \$3,000; Assistant Civil Engineer, State Engineer's Department, \$5 to \$6 a day; Civil Engineering Draughtsman, \$4 to \$5 a day; Examiners in English and Sciences, Education Department \$720 to \$900, also for temporary summer employment at \$60 to \$100 a month; Health Officer, Town of Richmond, Ontario county; Inspector of Conduits, Public Service Commission, First District, \$1,200; Mechanical Engineer, Public Service Commission, Second District, \$1,200; Music Teacher, State Institutions, \$360 to \$600 a year and maintenance; Guard, State Prisons and Reformatories, \$660 with stated increase to \$900; Taxidermist, State Museum, \$900; Watchman, Erie County Service, \$600.

The last day for filing applications for these positions is April 11th. Full information and application forms for any of these examinations may be obtained by addressing the Chief Examiner of the Commission at Albany.

CHARLES S. FOWLER,
Chief Examiner.

AN APPEAL TO AMERICAN PHYSICIANS.—During the year 1907 over 200 papers, lectures and pamphlets were published in Europe and America presenting different phases of alcoholism and inebriety, from a purely scientific point of view. Many of the authors complained that these papers were not read and were practically lost, because they did not reach medical

men interested in this subject. The Scientific Federation Bureau, organized nearly two years ago at Boston, Mass., for the purpose of collecting and disseminating the facts, concerning the alcoholic problem in connection with the International Bureau of Europe, proposes to secure a list of names of persons interested in the scientific study of the alcoholic problem. This list is to be made available for authors who write on this subject, and who wish to address a special audience of physicians, not only to increase their interest, but to stimulate farther study of the subject. Such a list will enable the Bureau to secure facts from all parts of the country from reliable sources, and keep both author and reader in closer touch with the work that is done. In this way the studies of medical men can be grouped and brought before others interested, and be made practical. All physicians who are interested in this new field of study and who wish to know something of the research work and studies of medical men at home and abroad, are urged to send their names and addresses, so as to be registered and receive copies or abstracts of papers from authors and students who may wish to have their work examined by interested parties. As chairman of the board of directors of the Federation Bureau, I earnestly request all physicians who have any interest in this subject, to send me not only their own names, but lists of reputable physicians who would like to receive scientific literature and accounts of research work and what is said in the medical world regarding this great problem. Address, T. D. CROTHERS, M. D.,

Hartford, Conn.

Chairman.

THE CENTRAL COMMITTEE OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS has announced the offer of the following prizes:

I. A prize of \$1,000 is offered for the best evidence of effective work in the prevention or relief of tuberculosis by any voluntary Association since the last International Congress in 1905. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

Evidence is to include all forms of printed matter, educational leaflets, etc.; report showing increase of membership, organization, classes reached—such as labor unions, schools, churches, etc.; lectures given; influence in stimulating local Boards of Health, schools, dispensaries, hospitals for the care of tuberculosis; newspaper clippings of meetings held; methods of raising money; method of keeping accounts.

Each competitor must present a brief or report in printed form. No formal announcement of intention to compete is required.

II. A prize of \$1,000 is offered for the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management, and results obtained. Each competitor must present a brief or report in printed form.

III. A prize of \$1,000 is offered for the best exhibit of a furnished house, for a family or group of families of the working class, designed in the interest of the crusade against tuberculosis. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award. This prize is designed to stimulate efforts toward securing a maximum of sun-light, ventilation, proper heating, and general sanitary arrangement for an inexpensive home. A model of house and furnishing is required. Each competitor must present a brief with drawings, specifications, estimates, etc., with an explanation of points of special excellence. Entry may be made under competitor's own name.

IV. A prize of \$1,000 is offered for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management, and results obtained. Each competitor must present a brief or report in printed form.

V. A prize of \$1,000 is offered for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management and results obtained. Each competitor must present a brief or report in printed form.

VI. The Hodgkins Fund Prize of \$1,500 is offered by the Smithsonian Institution for the best treatise that may be submitted on "The Relation of Atmospheric Air to Tuberculosis."

The detailed definition of this prize may be obtained from the Secretary-General of the International Congress or Secretary of the Smithsonian Institution, Chas. D. Walcott.

VII. Prizes for Educational Leaflets:

A prize of \$100 is offered for the best educational leaflet submitted in each of the seven classes defined below. In addition to the prize of \$100, a gold medal and two silver medals will be awarded in each class. Each prize and medal will be accompanied by a diploma or certificate of award.

Competitors must be entered under assumed names.

A. For adults generally (not to exceed 1,000 words).

B. For teachers (not to exceed 2,000 words).

C. For mothers (not to exceed 1,000 words).

D. For in-door workers (not to exceed 1,000 words).

E. For dairy farmers (not to exceed 1,000 words).

F. For school children in grammar school grades (not to exceed 500 words).

In classes A, B, C, D, E, and F, brevity of statement without sacrifice of clearness will be of weight in awarding. All leaf-

lets entered must be printed in the form they are designed to take.

- G. Pictorial booklet for school children in primary grades and for the nursery.

Class G is designed to produce an artistic picture-book for children, extolling the value of fresh air, sun-light, cleanliness, etc., and showing contrasting conditions. "Slovenly Peter" has been suggested as a possible type. Entry may be made in the form of original designs without printing.

VIII. A gold medal and two silver medals are offered for the best exhibits sent in by any States of the United States, illustrating effective organization for the restriction of tuberculosis. Each medal will be accompanied by a diploma or certificate of award.

IX. A gold medal and two silver medals are offered for the best exhibits sent in by any State or Country (the United States excluded), illustrating effective organization for the restriction of tuberculosis. Each medal will be accompanied by a diploma or certificate of award.

X. A gold medal and two silver medals are offered for each of the following exhibits; each medal will be accompanied by a diploma or certificate of award; wherever possible each competitor is required to file a brief or printed report:

- A. For the best contribution to the pathological exhibit.
- B. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any State of the United States. Brief required.
- C. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any State or Country (the United States excluded). Brief required.
- D. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any municipality in the world. Brief required.
- E. For the society engaged in the crusade against tuberculosis having the largest membership in relation to population. Brief required.
- F. For the plans which have been proven best for raising money for the crusade against tuberculosis. Brief required.
- G. For the best exhibit of a passenger railway car in the interest of the crusade against tuberculosis. Brief required.
- H. For the best plans for employment for arrested cases of tuberculosis. Brief required.

XI. Prizes of two gold medals and three silver medals will be awarded for the best exhibit of a work-shop or factory in the interest of the crusade against tuberculosis. These medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management, and results obtained. Each competitor must present a brief or report in printed form.

AMERICAN MEDICINE.—The address of this periodical has been changed from 130 So. 15th Street, Philadelphia, Pa., to 84 William Street, New York City.

THE ARCHIVES OF INTERNAL MEDICINE is the name of a new journal published under the auspices of the American Medical Association. The journal will be issued monthly, under the editorial management of Drs. Joseph L. Miller of Chicago, Richard C. Cabot of Boston, George Dock of Ann Arbor, David L. Edsall of Philadelphia, Theodore C. Janeway of New York, and W. S. Thayer of Baltimore.

INSTRUCTION IN MEDICAL SCHOOLS REGARDING THE U. S. PHARMACOPOEIA.—At an informal conference recently called by Prof. Joseph P. Remington, and attended by sixteen prominent teachers in the medical schools of Philadelphia, the following resolution was passed:

Resolved, That it is of the utmost importance for accuracy in prescribing, and in the treatment of disease, that students of medicine be instructed fully as to those portions of the United States Pharmacopeia which are of value to the practitioner, and that members of the medical profession be urged to prescribe the preparations of that publication; and further, that this resolution be forwarded to Medical and Pharmaceutical journals and to the teachers of medicine and therapeutics in the United States.

PERSONALS—Dr. WALTER A. LEONARD (A. M. C., 1899), has moved from Shushan, N. Y., to Cambridge, N. Y.

—Dr. ARCHIE J. CULLEN (A. M. C., 1904), has moved from Watervliet, N. Y., to Cambridge, N. Y.

—Dr. FRANK E. WHITE (A. M. C., 1905), has moved from 100 Broadway, Schenectady, to 7 Westinghouse Place.

—Dr. REID GILMORE (A. M. C., 1900), has moved from La Fayette Street to 1033 State Street, Schenectady.

—Dr. A. V. MYNDERSE (A. M. C., 1888), has been re-elected President of the village of Scotia, N. Y.

—Dr. ARTHUR G. ROOT (A. M. C., 1900), becomes President of the Medical Society of the State of New York owing to the refusal of Dr. Edward L. Trudeau of Saranac Lake to act.

DIED.—Dr. AMOS S. JONES (A. M. C., 1854), surgeon of the Forty-first Wisconsin Volunteer Infantry during the Civil War, died suddenly at his home in Dayton, February 23, from cerebral hemorrhage, aged 77.

Current Medical Literature**REVIEWS AND NOTICES OF BOOKS**

A Text-Book of Minor Surgery. By EDWARD MILTON FOOTE, A. M., M. D., Instructor in Surgery, College of Physicians and Surgeons (Columbia University); lecturer on surgery, New York Polyclinic Medical School; visiting surgeon, New York City Hospital; visiting surgeon, St. Joseph's Hospital; consulting surgeon, Randall's Island Hospitals and Schools. Formerly Chief in Surgery at the Vanderbilt Clinic. Illustrated by 407 engravings from original drawings and photographs. D. Appleton & Company, New York and London, 1908.

This volume represents the result of a long practical experience in the management of minor surgical ailments which the author has had at the Vanderbilt Clinic, coupled with a most careful and painstaking study of surgical literature as it pertains to this department. Unfortunately, most if not all of the works upon minor surgery are minor in every sense of the word and therefore of but little practical value either to surgeon or patient. Why it is that the smaller things in surgery, which really form the bulk of the work of this department of medical science have failed to receive the same careful and scientific consideration devoted to the so-called major operations and conditions cannot be well understood, but is thoroughly attested by the thousands and tens of thousands of individuals whose minor surgical ailments have been inadequately and improperly treated, from which much unnecessary suffering and crippling have resulted. The average medical student is encouraged to learn all about the treatment of more or less rare abdominal conditions, but the proper management of an ingrowing toenail is quite neglected. It is, therefore, with great pleasure that we welcome the appearance of a real work on minor surgery in which thoroughly modern and scientific surgical principles are set forth and an intelligent discussion of the symptoms and treatment of the so-called minor surgical conditions is presented.

The volume, which contains 713 pages of subject matter, to which an excellent index is added, is subdivided into eight sections. Section one deals with affections of the head, including injuries, inflammations, tumors and deformities. The second section presents the affections of the neck which, like the preceding and following sections, includes the injuries, inflammations, tumors and deformities. Section three is devoted to affections of the trunk, while in section four affections of the genito-urinary organs, including those of the female, are discussed. Affections of the anus and rectum is the subject of section five, and affections of the arm and hand the subject of section six. Affections of the leg and foot occupy section seven. The volume closes with a section on minor surgical technique, which includes an excellent chapter on bandaging and one on the preparation of the various kinds of bandages, dressings and ligatures. The volume is splendidly illustrated with four hundred and seven engravings from original drawings and photographs. The whole work is attractively put together and is a credit to the bookmaker's art. We

feel that this work cannot be too highly commended nor too strongly recommended not only to the medical man who occasionally does surgery, but to the surgeon who frequently must do minor surgery. To every physician, therefore, who ever has occasion to do anything of a surgical character, we feel sure that this work will be quite indispensable.

ARTHUR W. ELTING.

The Pancreas; Its Surgery and Pathology. By A. W. MAYO ROBSON, D. SC. (LEEDS), F. R. C. S. (ENG.) of London, and P. J. CAMMIDGE, M. D., (ENG.) D. P. H. (CAMB.), of London. Octavo volume of 546 pages, fully illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

A book such as the present volume is always welcomed by the profession. At a time when medical and surgical knowledge is advancing so rapidly that extensive systems of surgery soon get out of date, it is of distinct advantage to have the surgery of a single organ of the body presented in the form of a monograph and when the subject is presented by men of such wide experience and knowledge as the present authors, the work has an added authority.

The knowledge in regard to the pancreas has increased greatly in recent years, but while its anatomy, physiology and pathology are now much better understood not all the problems connected with it are by any means solved. It has been found that the pancreas is not only an accessory digestive gland, but a structure indispensable for the metabolic needs of the organism.

In the present work, all the newer and better theories in regard to the pancreas are discussed and while the authors avoid being dictatorial in their statements, they, nevertheless, impress their own views upon the reader.

The first six chapters in the book are concerned with the subjects of Comparative Anatomy, Anatomy, Embryology, Anatomical Anomalies, Surgical Anatomy and Histology. In describing the histology of the pancreas, the authors take the view that the islands of Langerhans are independent structures related to the control of carbohydrate metabolism.

The physiology and pathology of the pancreas are discussed in separate chapters and these are followed by a chapter on fat necrosis. The authors agree with the now generally accepted view that fat necrosis is the result of pathological processes affecting the pancreas.

The chapter on Chemical Pathology is of special interest and is presented in a thoroughly up-to-date manner. This chapter, among many other interesting topics, contains a discussion of the cause of the white color in stools and the authors describe their new modification of the "pancreatic" reaction in the urine and claim that a positive reaction can be expected in all cases where there is an active inflammatory change in the pancreas and it can thus be distinguished from intestinal obstruction and other conditions with which it might be confused.

In the chapter on diabetes, the authors say, "It is now generally admitted that the most satisfactory explanation of pancreatic diabetes is that which supposes that the disease is due to the absence of some ferment or co-ferment-like body, which normally reaches the blood from the gland.

"General Symptomatology and Diagnosis" is the title of an interesting chapter which precedes the chapters concerned with the various diseases of the pancreas. The authors emphasize the fact that diagnosis of diseased conditions of the pancreas are now reasonably sure.

In considering the cause of inflammatory affections of the pancreas, the authors hold that gall-stones in the common duct are a frequent, in fact, by far the most frequent cause of the various forms of pancreatitis.

In acute and subacute pancreatitis, they advise early operation claiming that in this condition just as in perforation or gangrenous appendicitis, an early evacuation of septic material is called for. They advise surgical treatment in chronic pancreatitis and report a mortality of only two per cent. They state that the surgical treatment of calculi promises a reasonable hope for a cure and that in the treatment of cysts the evidence is in favor of drainage. Carcinoma and other neoplasms of the pancreas are discussed and the difficulty in diagnosis between chronic pancreatitis and carcinoma is well brought out.

This is a work which no abdominal surgeon should be without and will be of great value also to all general practitioners.

J. M. B.

The Treatment of Fractures. With Notes Upon a Few Common Dislocations. By CHAS. L. SCUDDER, M. D., Surgeon to the Massachusetts General Hospital. Sixth Edition, Revised and Enlarged. Octavo volume of 635 pages, with 854 original illustrations. Philadelphia and London: W. B. Saunders Company, 1907. Polished Buckram, \$5.50 net; Half Morocco, \$7.00 net.

That the sixth edition of this work is required within a comparatively few years is unquestioned evidence of its intrinsic merit. In this edition the same general arrangement and method of presentation has been followed as in previous editions, new matter in the way of treatment and illustrations has been added wherever opportunity presented and the entire work has been made to correspond as nearly as possible to the most modern ideas relative to the treatment of all forms of fractures. Somewhat more space has been devoted to operative procedures and certain complications than in previous editions. The author has never attempted to discuss either the historical or pathological side of fractures, nor has he devoted great attention to the clinical phenomena, the chief emphasis being laid upon the most important matter, namely, the treatment. No book on fractures has ever been better illustrated if as well, and these illustrations are far more instructive than many pages of subject matter could possibly be. Considerable attention is paid to ununited fractures and their management, as well as to that most distressing complication, Volkmann's contracture. To the discussion of fractures is

appended a most practical chapter upon a few of the more common dislocations.

The volume, which is composed of six hundred and five pages of subject matter, contains eight hundred and fifty-six illustrations. An excellent bibliography is appended, together with a complete index. From every point of view, the volume is most attractive and illustrative of the best type of bookmaking. It contains so much of value and is so practical that any one who has to treat fractures cannot afford to be without it.

ARTHUR W. ELTING.

Diseases of the Genito-Urinary Organs and the Kidney. By ROBERT H. GREENE, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and HARLOW BROOKS, M. D., Assistant Professor of Pathology, University and Bellevue Hospital Medical School. Octavo of 536 pages, profusely illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

In this work, the authors have not attempted to give a complete presentation of the diseases of the genito-urinary organs and the kidney. They have discussed only those conditions and methods which have appeared to them to be of the greatest importance. In the consideration of treatment they, for the most part, describe only those methods which they have personally found most practical and useful.

A larger amount of space has been devoted to the urinary organs proper and relatively less has been said of purely sexual disorders.

The work is the conjoint product of a surgeon and a physician and the authors intend that it will appeal to physicians as well as surgeons since the medical and surgical aspects have received equal attention.

The illustrations are, for the most part, well chosen and help materially
J. M. B.

The Operating Room and the Patient. By RUSSELL S. FOWLER, M. D., Professor of Surgery, Brooklyn Postgraduate Medical School, Brooklyn, New York. Second Edition, Enlarged. Octavo volume of 284 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$2.00 net.

This volume of 284 pages is devoted mainly to a description of a properly appointed operating room and its personnel, surgical supplies and their preparation, the anaesthetic room with mention of the various methods of anaesthesia, local and general, and the preparation and post-operative care of patients. It contains a large number of facts especially useful to the surgical nurse or interne.
G. E. B.

A Manual of the Practice of Medicine, Prepared Especially for Students.

By A. A. STEVENS, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania; Lecturer on Physical Diagnosis in the University of Pennsylvania; Physician to the Episcopal Hospital and to St. Agnes Hospital; Assistant Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc. Eighth Edition, Revised, Illustrated. W. B. Saunders & Co., Philadelphia and London, 1907.

This book is again presented in a new edition after the usual two years interval since the last, with a reprinting in the intermediate years. For this edition the text has been thoroughly revised, much new material has been introduced and many articles, especially in the sections dealing with Diseases of the Nervous System have been rewritten. The book remains a concise but clear and accurate representation of the essential facts of the Practice of Medicine and when used with proper restrictions ought to be of much value to medical students for whom it is especially prepared.

C. K. W., JR.

A Text-Book of the Practice of Medicine. By JAMES M. ANDERS, M. D.,

Ph. D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eighth Revised Edition. Octavo of 1317 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.50 net; Half Morocco, \$7.00 net.

In reviewing the seventh edition of this work, which appeared just two years ago, THE ANNALS said: "So well known and so deservedly popular is Ander's text-book that a lengthy review of this seventh edition is not necessary; in fact it is almost enough to say that it fully comes up to the standard set by other editions." The above statement applies with equal force to this edition, so far as the subject matter goes, for much new matter has been introduced, a great deal of the old has been revised and brought up to date, and it has all been done in that accurate, exact, and interesting style which makes every thing written by Dr. Anders popular with the profession.

Notwithstanding the satisfaction that must come to an author to have his written words "up to date," it cannot but occur to the teacher to question the wisdom of publishing eight editions of a text-book in ten years. Very few students are willing, even if they can afford, to purchase as many text-books as this practice involves. While there is no better single volume published than this, the publishers have signally failed to keep up with the standard set by the author. The binding, in the copy before the reviewer is miserable, there are several mistakes in the index, and there are many pages so blurred from double imprints that it is impossible to read more than an occasional word.

SPENCER L. DAWES.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by W. T. LONGCOPE, M. D., Philadelphia, U. S. A., with the collaboration of WM. OSLER, M. D., Oxford, JOHN H. MUSSER, M. D., Philadelphia, A. MCPHEDRAN, M. D., Toronto, FRANK BILLINGS, M. D., Chicago, CHAS. H. MAYO, M. D., Rochester, THOS. H. ROTCH, M. D., Boston, JOHN G. CLARK, M. D., Philadelphia, JAMES J. WALSH, M. D., New York, J. W. BALLANTINE, M. D., Edinburgh, JOHN HAROLD, M. D., London, RICHARD KRETZ, M. D., Vienna; with regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume II, Seventeenth Series, 1907. Philadelphia and London: J. B. Lippincott Company.

The present volume is up to the standard with many interesting and helpful articles on all branches of medicine and surgery, among which we would mention "A Plea for Laparotomy rather than Paracentesis in Ascites," by Geo. Dock; he sets forth the advantages from the standpoint of diagnosis and treatment of exploratory incision, going on to sight cases where lives could probably have been saved had an early diagnosis been made as a sequence of laparotomy.

"General anesthesia unjustifiable in the radical cure of Inguinal Hernia; Local anesthesia in Major Operations" is the rather startling title of an article by Dr. Bodine, of New York.

The advantages claimed are: (1) Less damage to life; (2) a more delicate manipulation of the tissues thus favoring asepsis; (3) consent of the patient more easily gained; (4) comfort of the patient.

Under the title "Vaccine Treatment of Infectious Diseases," Dr. Rufus Cole, of Johns Hopkins gives a clear and concise review of the present status of the opsonic index, immunization and vaccine treatment of infectious diseases. The whole subject is rich in promise, but as yet is in an experimental stage.

"Gonorrhea and Syphilis in Infancy and Early Childhood," by Thomas M. Rotch, M. D., of Harvard University, is a most timely and helpful article, the author emphasizes the great prevalence of these diseases in early life and shows the ease with which they are transmitted innocently from one member of a family to another, especially is this true in Children's Wards where improperly washed hands and napkins may be the offending carriers of infection. He deplores the ignorance of the lay mind upon this subject, and cautions physicians regarding an erroneous diagnosis of inherited syphilis. Dr. Rotch depends largely upon radiographic pictures in making a diagnosis of bone diseases in children, several of which are reproduced with the article adding much to its interest.

H. D. C.

Practical Fever Nursing. By EDWARD C. REGISTER, M. D., Professor of the Practice of Medicine in the North Carolina Medical College. Octavo volume of 352 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$2.50 net.

The introductory paragraph of the author's preface is as follows: "In the preparation of this volume the object has been to present to nurses a working text-book that will completely cover the field of practical fever nursing. A nurse, before she can intelligently care for a fever patient, must have some knowledge of the disease and its medical treatment. She cannot know the cause and significance of many of the symptoms unless she knows something of the pathologic processes that are going on within the body, nor can she anticipate all that is expected of her by the physician unless she is at least partly familiar with the history and treatment of the fever which she is nursing. For this reason it is, as I interpret it, necessary, in the preparation of a work of this kind, to incorporate and describe in as non-technical a manner as possible, the pathology of the different fevers, their prognosis and the various forms of treatment."

If we bear this in mind and look upon the book only from this standpoint, we have almost nothing but praise for it, for the few errors which have crept in from time to time are unimportant and sometimes even a mere matter of judgment. However we question whether it will be generally considered necessary to instruct a nurse in as great detail concerning disease as is given in this work. It is much larger and more full of detail than many text-books of medicine for medical students. The section on typhoid fever is especially complete and covers nearly 100 pages; many of the other diseases are treated nearly as fully. The book contains moreover a description of only the acute febrile diseases, and thus tends to unnecessary specialism, particularly as it is difficult to separate accurately the febrile from the non-febrile maladies, even upon the basis of the probable infectious origin of all of the former.

The first part of the book comprises an excellent general consideration of symptomatology, etiology, contagion, treatment (exclusive of drugs, except antipyretics) and of the general and special duties of nurses in caring for febrile patients.

C. K. W., JR.

Hygiene of Nerves and Mind in Health and Disease. By AUGUST FOREL, M. D., Formerly Professor of Psychiatry in the University of Zurich. Authorized Translation from the second German edition. By HERBERT AUSTIN AIKINS, Ph. D., Professor in the Western Reserve University. G. P. Putnam's Sons, New York and London, 1907.

This book is a popular treatise by a well-known author upon a scientific subject and is primarily intended for a body of intelligent laymen; considered from this view-point there is much in it that is commendable. The inherent difficulty of the subject matter has been greatly overcome

by an intelligent arrangement and also by an exceptionally lucid style of expression. The book is divided into three main parts.

Part I contains an excellent summary of normal psychology, the anatomy and physiology of the nervous system; the portion on embryology and race history is particularly good. As an ardent advocate of the theory of Monism, Forel attempts to base the entire work on this basis, but it seems to us that his chapter dealing with the relation of the mind to the brain falls short to be convincing.

Part II is devoted to the pathology of the nervous system. After a general survey of morbid mental processes there is an admirable account of ontogenetic factors and the symptoms arising therefrom, sharply distinguished from those disorders entailed by phylogenetic disturbances. Worthy of note is chapter VIII which gives a clear description of various causes underlying nervous diseases, laying due emphasis on inheritance and also the pernicious effect of alcohol and lues on the victims and their progeny. The synopsis of Mental Diseases embodies Kræpelin's classification in such a rudimentary way, that we doubt if any one not sufficiently familiar with psychiatry will glean any information from its perusal and might have been conveniently omitted.

Part III discusses Hygiene proper and the principles laid down are based upon the consideration of the preceding chapters. They can be epitomized as follows: Good inheritance, total abstinence from alcohol and narcotics, harmonious exercise of mental and physical energies, good nourishment, sufficient sleep and also a spirit of equanimity. He severely criticises the current methods of pedagogics and highly recommends such schools as Dr. Reddie's in England and Dr. Lietz's in Germany. We should like to have had more stress put on sexual hygiene, as without a doubt, ignorance and abnormal practices in this field are fruitful sources of various psycho-neuroses.

It is no easy task to enter into the discussion of so many scientific subjects in a book for popular use, but we believe that Forel has been eminently successful in accomplishing it. The translator also deserves a great deal of credit for rendering it into good English. The book, we believe, ought to prove of great value in giving an insight into many a vital process of the nervous system and we have no hesitancy in recommending it to an intelligent and discerning public. The book is handy and written in large clear type.

N. A. PASHAYAN.

A Text-Book of Clinical Anatomy. For Students and Practitioners. By DANIEL N. EISENDRATH, A. B., M. D., Clinical Professor of Anatomy in the Medical Department of the University of Illinois (College of Physicians and Surgeons), Chicago. Second Revised Edition. Octavo of 535 pages, with 153 illustrations, a number in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

The warm reception given to the first edition of this book and its stimulus in the teaching of surface and topographic anatomy as applied

to both medicine and surgery have fully warranted the author in bringing out the second edition.

The various regions of the body are considered in detail, first as to the proper methods of examination during life, second as to the surface markings, and third, as to the relation of nerves, vessels, viscera, etc. Many of the pathological conditions affecting these regions are considered with regard to diagnosis.

The work consists of 535 pages and is illustrated with 168 photographs and drawings, the majority of which are original. From the standpoint of practical anatomy this book is of great value to both student and practitioner.

G. E. B.

Atlas and Text-Book of Human Anatomy. Volume III, completing the work. By PROF. J. SOBOTTA, of Wurzburg. Edited, with additions, by J. PLAYFAIR McMURRICH, A. M., Ph. D., Professor of Anatomy at the University of Toronto, Canada. Quarto of 342 pages, containing 297 illustrations, mostly all in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

The third and last volume of this Atlas includes the vascular system and the entire nervous system, together with the organs of special sense. The chief aim of the author in this volume, as in the preceding ones, has been to produce a book useful to the medical student and practitioner, rather than an atlas for the finished anatomist. With this end in view he has represented in the same illustrations the arteries, veins and nerves which occur together in the various regions, as the student is accustomed to see them in the cadaver. To accomplish this simultaneous representation a reproduction in colors was rendered necessary. The illustrations are splendid examples of what may be accomplished by multicolored lithography, colored half tones, etc.; they are really unsurpassed, not only from an artistic point of view, but also from that of anatomical accuracy and clearness. As is quite appropriate in an atlas the text is somewhat subordinate to the illustrations but it is eminently satisfactory. This Atlas and Text-book is without doubt one of the very best.

GEORGE E. BEILBY.

A Manual of Diseases of the Nose, Throat, and Ear. By E. BALDWIN GLEASON, M. D., Clinical Professor of Otology at the Medico-Chirurgical College, Philadelphia. 12mo of 556 pages, profusely illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Flexible leather, \$2.50 net.

This excellent book contains all the essential facts of Rhinology, Otology and Laryngology in a concise form. Thoroughness has however not been sacrificed for the sake of brevity. All the usual operations of the nose, throat and ear have been well described.

A good feature of the book is the formulary at the end. Spray

formulas, inhalations, local applications, etc., are given with a complete description of the methods of use of the more important drugs.

The author in some of his prescriptions, particularly snuffs and sprays for the treatment of certain nasal conditions, recommends the use of cocaine. It is true perhaps, that, as he says, patients are in no danger of contracting the cocaine habit as the druggist would not, or at least should not repeat such a prescription without the physician's order.

Nevertheless it seems unwise to allow patients to use sprays or snuffs containing much cocaine, themselves. It is better not to give them the prescription at all.

The book contains many excellent plates, a good many being original or drawn from dissections made by the author.

C. F. T.

SURGERY

Edited by Albert Vander Veer, M. D., and Arthur W. Elting, M. D.

Accidents due to Electricity. (Accidents electriques.)

DE COURNELLES. *Le Progres Medical*, 1907, XXIII, 6.

In the beginning of this article which is printed under the general heading "Revue d'Electrotherapie" the author refers to the mechanism of death in fatal cases. This he states on the authority of d'Arsonval and Battelli is inhibition of the heart fibrillary contractions of the heart muscle. He suggests the following measures in treatment: artificial respiration, electric stimulation and massage of the heart.

Dr. Leduc's experiments in the production of electrical anesthesia as well as Dr. Louise Roubinovitch's thesis on the same subject are mentioned. Dr. Leduc remained twenty minutes under the influence of thirty-five volts having an intensity of four milliamperes in an interrupted circuit. In animals the anesthesia has been prolonged to a duration of nearly five hours, being borne by rabbits better than chloroform or ether.

Some interesting data regarding electrical accidents were obtained by the writer from the Commissioner of Labor (*directeur du travail*).

A regulation for the protection of electrical workers gives the following voltages as dangerous: one hundred and fifty volts for the interrupted current and six hundred volts for the continuous current. The difference is explained by the fact that the muscular contraction and the sweating which accompany the alternating current make the contact better and so facilitate the passage of the current. The resistance of the skin makes up the greater part of the resistance of the whole body and according to Leduc depends on its chemical composition and the number of ions it contains.

Accidents following the passage of currents of low voltage corroborate this theory. Fatal accidents have occurred with continuous currents of between two and three hundred volts and alternating currents of ninety-

six and one hundred and ten volts. In most of these cases the victims had their bare feet on damp ground at the time of the accident.

It is difficult to obtain reliable statistics regarding fatal cases. In France a dozen or more cases are reported every year in the journals and quite a number probably remain unreported. In 1905 a multiple accident occurred; as a result of a live wire falling during a storm thirty-one persons lost their lives.

From a practical standpoint it seems that the intensity of the current is the real criterion of danger. The following provisional rule has the sanction of several authors: below twenty-five milliamperes, absolute security; above one hundred milliamperes, there is likelihood of fatal accident. The resistance of the individual to the passage of the current also varies. Factors affecting it are fatigue, emotion, antecedent condition, etc. A case is reported of a motorman through whom a current of one thousand volts passed while he was asleep. No lasting effect was produced other than a serious burn. On the other hand, the apparent lesion may be slight while the real injury done to tissues may be very great, as shown by subsequent sloughing. The writer reports an interesting case of this sort. Early full incisions are recommended if the current has been a strong one.

The eyes are frequently injured in accidents caused by electricity. There may be erythropsia "red vision," loss of acuteness of vision and limitation of the visual field.

The Clinical Value of Wasserman's Serum Diagnosis in Syphilis. (Ueber den klinische Wert der Wassermanschen Serodiagnostik bei Syphilis.)

W. FISCHER AND G. MEIER. *Deutsche medizinische Wochenschrift*, No. 52, 33 Jahrgang, December 26, 1907.

Citron has recently emphasized the value of the serum diagnosis in syphilis and seems to have demonstrated that the reaction is the more marked the longer the syphilis has existed and the more recrudescences there have been. The early or acute syphilis, on the other hand, does not seem to give such positive reactions. The well-treated cases of syphilis have shown the reaction in about sixty-five per cent., while those that were not treated showed it in eighty-one per cent. Citron further urged the use of this method in the selection of wet nurses, in the determination of the safety of marriage of syphilitic individuals, and for statistical purposes. The discussion which Citron's paper aroused seemed to be unanimously in favor of this as a diagnostic method of great value.

The question as to the nature of the phenomenon; that is, whether the action was a specific one in the serological sense does not, however, seem to have been settled. The writer regards it as very desirable to settle if possible of how much diagnostic value this reaction is in the different stages of the disease and how therapeutic measures may be affected by it; further, as to whether a negative result of the reaction would

justify the belief of a cure. The writers report their observation in 114 cases. Of this number, there were 11 who had no evidences whatever of syphilis, and in all of them the reaction was negative. Of the infected cases eighty-three and seven-tenths per cent. gave a positive reaction. In all cases in which there was a positive serum reaction the clinical diagnosis was conclusively one of syphilis. All the tertiary forms were positive. It is apparent, therefore, that after a long therapeutic use of mercury and iodide the anti-bodies were markedly increased. The writers believe that the fact that practically eighty-four per cent. of their investigations were positive and that they were unable to obtain the reaction in any of the non-syphilitic cases is an indication of the value of this diagnostic method.

They especially emphasize the uncertainty of the demonstration of spirochatae, especially in the late tertiary lesions. They express the belief that with a further development of the technic the percentage of positive reactions would be even greater. They emphasize the fact that the earliest publications, from Neisser's clinic, gave only twenty per cent. of positive results and that as the technic has been improved the percentage has been steadily increased. They do not believe that those cases of syphilis which gave a negative reaction can be considered as healed, but rather that the individual affected had for the time being stopped producing anti-bodies. The writers do not believe that a negative reaction is sufficient justification for a marriage of syphilitic individuals; but believe that a positive reaction, even in the absence of all evidences of syphilis should prevent marriage. They furthermore believe that the reaction is of the greatest importance in the selection of wet nurses. From their observations they are inclined to believe that the therapy of syphilis has no especial effect upon the formation of the anti-bodies.

Their conclusions are:

1. That the Wasserman's syphilis reaction is specific for syphilis. Positive reaction in all their observations has been confirmed by the clinical appearances.
2. The reaction is purely a constitutional one and does not indicate what organ or portion of the body may be affected with syphilis.
3. Positive reaction is only of importance. From a negative reaction a positive conclusion cannot be drawn either as to absence of syphilis or as to a cure of a pre-existing syphilis.
4. Their observations have not demonstrated any influence of therapy upon the reaction.

Contracted Bladder and Its Treatment. (Die Schrumpfblass und ihre Behandlung. Darmplastik.)

W. KAUSCH. *Archiv für klinische Chirurgie*, Vol. 83, Heft. 1.

An abnormally small bladder can result from several different causes. The condition is very rarely congenital, although the complete absence of the bladder has been noted. The diminution in size of the bladder due to a chronic spasm of the musculature has been noted in certain neuroses.

This condition is probably due to a hypersensitiveness of the mucous membrane, which causes a desire to urinate as soon as a few cubic centimeters of urine accumulate. In rare instances inflammatory processes outside of the bladder cause a lessening in the size of the organ. This is especially true of pelvic inflammation in the female. Tumors pressing it from the outside, or stone, may also reduce the capacity. The most frequent cause of the abnormally small bladder, however, is cystitis. The reduction in size in such a condition may result in either one of two ways: first, from concentric hypertrophy of the musculature associated with a marked formation of trabeculae. From the outside the bladder may appear to be of normal size, but the wall is so much thickened that the cavity is much reduced. Hartmann reported a case in which the wall was four centimeters thick, the circumference of the cavity three centimeters. Much more frequently the diminution in size results from a contracture of the wall as a result of interstitial cystitis. In these cases the muscle has almost entirely disappeared and has been replaced by connective tissue. Every form of cystitis may give rise to a contracted bladder, most commonly the ordinary forms of cystitis, those due to stone, the tuberculous and the gonorrheal cystitis, and the forms due to hypertrophy of the prostate, strictures and fistulae. The symptoms depend upon the amount of contracture. In very pronounced cases the capacity may be only ten cubic centimeters. Even with a greater capacity of from twenty to thirty cubic centimeters there is usually incontinence of urine.

The diagnosis is usually easy, the characteristic discomfort, the small capacity and, if the cavity allows, the use of the cystoscope, usually render the diagnosis clear. In every instance the condition is a most distressing one for the patient. The treatment has hitherto been dilatation. Dilatation may be produced either by means of a catheter and syringe or gravity pressure. Comparatively few cases are essentially benefited by dilatation. Many remain unimproved, and sometimes dilatation produces serious disturbance. In every instance dilatation must be discontinued when fever, cystitis or an ascending inflammatory process is evident. In some instances suprapubic cystostomy, with a permanent fistula and the wearing of a urinal, has given some relief.

The writer reports an extremely interesting case of a young man of nineteen, who had suffered since the third year of life with the symptoms of a contracted bladder. A perineal operation confirmed the diagnosis of contraction of the bladder and showed that the bladder cavity was markedly reduced in size. In spite of every form of treatment, the patient steadily lost ground. Dilatation was out of the question, because of the inflammatory process which existed in the bladder. The writer therefore decided to endeavor to enlarge the bladder by some plastic operation. Experiments have shown that the wall of the intestine is the only tissue which can be used in this connection. For that reason the writer excluded fifteen centimeters of the ileum about one-half meter above the cecum, restoring the intestinal circulation by means of a circular suture. Both ends of the excluded portion of intestine were closed and one end was attached to the outside of the contracted bladder. At

a second operation an opening was made between the contracted bladder and the intestine, which at a third operation was considerably enlarged, and after the communication had become freely established the external opening was closed. The patient's condition was greatly improved and when he left the hospital his bladder had a capacity of 200 cubic centimeters and he could hold his urine from one to two hours. He lived some distance away and died six months later, apparently from tuberculosis. The result was in every way a most satisfactory one so far as the plastic operation was concerned.

The writer states that in a case of total extirpation of the bladder he would advise excluding a portion of the small intestine, closing one end, inserting the ureters into the excluded intestine and fastening the other end in the vicinity of the stump of the urethra. He believes that this would be very much more desirable than the implantation of the ureters into the rectum or upon the external surface.

He concludes:

1. The severe forms of contracted bladder which have hitherto been regarded as incurable can be cured by plastic enlargement of the bladder by means of intestine.

2. Causal or accompanying cystitis can be thereby cured.

3. The operation should be performed in several stages: (a) total exclusion of a loop of intestine, sagittal arrangement of it and fastening of one end of it to the top of the bladder; (b) opening of the intestinal loop and the bladder; (c) closure of the common cavity.

Stab Wound of Lung; Suture; Recovery. (Stichverletzung der Lunge; Naht; Heilung.)

VICTOR E. MERTENS. *Archiv für klinische Chirurgie*, Vol. 83, Heft 1.

The writer reports the case of a man, twenty-five years of age, who plunged a knife into the left side of the breast. He collapsed at once and was brought at once to the hospital. In the left side of the thorax there was a wound one and one-third centimeters in length just to the inner side of the nipple in the fourth intercostal space. On admission to the hospital the apex beat was visible; the pulse was small, eighty-eight. The area of heart dullness was normal. During the examination he sat up and this was followed by a gush of blood from the wound. At the same time the apex beat was lost and the area of heart dullness increased markedly. This led to the diagnosis of a probable injury to the heart.

The operation was performed one and one-half hours after the injury. A flap was made with the base toward the sternum. The fifth and sixth ribs were divided and the whole rib, skin, and muscle flap was separated from the parietal pleura. As soon as the wound in the pleura was exposed there was a pronounced gush of blood and the lung was at once grasped with forceps and drawn into the wound in the pleura. The parietal and visceral layers of the pleura were united in the vicinity of

the wound and the wound edges were drawn together with catgut, thus controlling the hemorrhage. To secure better coaptation of the flaps, the portion of the sixth rib contained in the flap was removed. The patient made an uninterrupted recovery.

The technique of the operation is of considerable importance and the writer reiterates what Macewan has emphasized before, that the wound in the lung should be fixed to the pleural wound, which greatly assists subsequent expansion of the collapsed lung. Furthermore, the fixation of the lung to the pleura is an excellent method of combating collapse which may occur on the opening of the thoracic cavity. This gives a support to the mediastinum and allows the other lung to function normally. This procedure furthermore reduces the dyspnea during the days immediately after the operation to the minimum.

It is furthermore of very great importance in opening the chest for a wound of the lung to preserve the parietal pleura intact and to carefully separate the ribs and muscle from it. This allows of satisfactory suture of the lung to the parietal pleura. The writer advises the use of silk rather than catgut for such suture, although he used catgut in his case. In the writer's case there was considerable emphysema in the neck and face following the operation. This was probably due to an interstitial emphysema of the lung which passed up through the anterior mediastinum into the neck.

Two years ago Garre collected from the literature nine operations for wounds of the lung, with six recoveries. Adding the writer's case makes ten operations with seven recoveries, which certainly justifies the procedure. There are four cases of stab wounds of the lung, of which three recovered. The one which died had four stab wounds and was operated on three days after the reception of the injury.

LARYNGOLOGY, RHINOLOGY AND OTOTOLOGY

Edited by Clement F. Theisen, M. D.

Concerning the Bleeding Polypi of the Nasal Septum. (Ueber die blutenden Polypen der Nasenscheidewand.)

MÖLLER JÖRGEN. *Archiv für Laryngologie und Rhinologie*, Bd XX, Heft I, 1907.

The first to describe these peculiar tumors was Lange. Schadowaldt first gave them the name bleeding polypi of the septum. These growths, in the large majority of the cases occur in women and in many cases there appears to be a distinct connection between pregnancy and the development of such growths. In an interesting case reported by Wright, the growth recurred several times after removal from the nose of a pregnant woman. In another year, when the patient was again pregnant the growth developed again and recurred after removal. It finally disappeared spontaneously after the woman was confined. Traumatism is given as an etiological factor by some writers (Freudenthal and Glas),

while Glas also thinks that rhinitis anterior sicca is an important cause. He made an accurate histological examination in ten cases, and in seven was able to determine the presence of rhinitis anterior sicca.

The author reports two typical cases of this interesting condition. In both his cases there was a distinct relationship to pregnancy.

Tracheal Diphtheria with Recurring Formation of Pseudo Membrane.

H. HERZOG. *Deutsche medizinische Wochenschrift*, No. 20, 1907.

The author had occasion to observe three times in a severe case of diphtheria "ecouvillonnage" of the larynx. In 1896 Variot and Bayeux described under the term "ecouvillonnage," a new procedure in the treatment of laryngeal diphtheria.

The method consists in the passing of the tube, just as in the ordinary intubation. The tube which loosens the membrane clinging to the walls of the larynx and trachea, is removed in a few minutes, and the detached membrane is coughed out.

In the following case described by the author, the patient coughed out the tube with a membranous cast of the trachea three times.

J. B., aged two and three-fourth years. Had measles four weeks before coming under the author's observation. Coryza and a hoarse cough for a week, with suffocative attacks for several nights. On examination, an extensive membrane was observed on both tonsils. The nose was clear. Intubation was performed within a half hour after the patient was admitted to the hospital. The tube could be easily introduced, but was coughed out after a few seconds, covered with a membrane which covered it like the finger of a glove. The membrane showed the impressions of the tracheal rings. Ten hours after the first intubation, urgent symptoms demanded a second one. The tube was again coughed out at once, and was covered with the same kind of membrane. Fourteen hours later another intubation had to be performed and the same thing happened. The same tube-like membrane was coughed out. The future history of the case is of no great interest. The patient made a complete recovery.

The use of antitoxin did not prevent the regeneration of the membrane in the trachea which occurred twice in twenty-five hours, but the ease with which the membrane was thrown out was undoubtedly due to the action of the serum.

ALBANY MEDICAL ANNALS

Original Communications

THE REPORT OF TWO CASES OF ACUTE ASCENDING PARALYSIS OF THE TYPE OF LANDRY WITH RECOVERY.

By HERMON C. GORDINIER, M. D.,

Professor of Physiology and Anatomy of the Nervous System, Albany Medical College

In an article published by me in the Jubilee Number of the ALBANY MEDICAL ANNALS for January, 1904, on acute ascending paralysis of the type of Landry, I formulated after a careful study of my own cases together with all the cases with autopsies in the literature, a definition which seemed more in accord with our present conception of that disease, and which at the same time did not differ essentially from the original definition given by Landry in 1859. It was as follows: Landry's symptom complex is an acute infection characterized by an ascending form of motor paralysis of a flaccid type, beginning in the lower extremities and rapidly extending to the muscles of the trunk and upper extremities and terminating with bulbar symptoms, and death from respiratory or cardiac paralysis. The symptoms are usually preceded for a variable length of time, by general malaise, various paraesthesiae and pain in the limbs. In some rare cases the paralysis is irregularly ascending in character or presents a reversal of the usual type, the bulbar symptoms appearing first, the disease then pursuing a descending course. The muscles usually show no tenderness, wasting or altered electrical reactions and the tendon reflexes are commonly absent. The bladder and rectum are rarely involved. The temperature though sometimes elevated is usually normal. The spleen and lymph nodes are often enlarged. Consciousness is retained to the end. The post-mortem changes though somewhat dissem-

inated are chiefly confined to the peripheral motor neurones, various bacteria have been found either in the nervous tissue or by cultivation, but no specific micro-organism has been isolated which is constantly associated with this infection.

In the above mentioned article I recorded two cases of Landry's paralysis, one with autopsy, the other with recovery. Since then, through the courtesy of Dr. Curtis of Round Lake, a third case has come under my direct observation which also recovered.

Knowing the skepticism which still hovers about the very existence of the Symptom Complex Landry's Paralysis and the idea held by many clinicians that the disease is necessarily fatal, I felt that it would be wise to record the history of the new case together with the clinical notes of my first case with recovery above alluded to. I have also appended a complete bibliography of all the cases of Landry's Paralysis with recovery.

CASE I.—A case of rapidly ascending motor paralysis following an infection with measles which began suddenly in the lower extremities and extended in turn to the muscles of the trunk, neck and upper extremities; unaccompanied by sensory or bulbar symptoms and terminating at the expiration of three months in perfect recovery.

February 20, 1905, saw in consultation with Dr. Curtis of Round Lake, Miss A. C., age nineteen years, American, occupation housemaid.

Family History.—Mother and three sisters died of Phthisis pulmonalis. Father is living at sixty-five years of age and is in good health. Has five brothers, all living.

Personal History.—Has never been ill since childhood. Matured at the age of fourteen years, menstruation normal. January 10, 1905, while visiting with friends at Rensselaer, N. Y., was exposed to measles and exactly fourteen days after sickened with the disease. Was ill about ten days when the rash, cough and temperature disappeared. She felt perfectly well and was up and about her room for three or four days when she was rather suddenly overcome by a feeling of great fatigue and prostration, and while attempting to walk across the room developed a sudden weakness in her legs and fell in a heap to the floor. She was unable to arise without assistance. Shortly after she made another attempt to walk and fell as before to the floor. She noticed on the day following that the slightest exertion would be accompanied by excessive sweating, marked dyspnea and local flushing of the face and neck. She stated that the weakness appeared to develop at first in the right lower extremity and that within a day or two the muscles of the opposite leg, thigh and lower part of the trunk were similarly affected. Four days after the initial attack she developed the same weakness of the upper extremities beginning about the shoulders and extending rapidly to the

elbows and to the muscles of the fore-arms. She has never experienced the slightest discomfort with headache, neuralgic pains, backache, numbness or formication or feeling of constriction about the trunk or extremities. She had at the onset slight rheumatoid pains confined to the biceps and calf muscles. She possesses perfect control over the bladder and rectum, has no difficulty in swallowing and has noticed no visual defects. She has had no sore throat.

Present Condition.—The patient is a strongly built and well nourished country girl weighing about 140 pounds. She assumes the dorsal decubitus and presents no edema, but her lips, fingers and ears are slightly cyanosed. She is almost completely paralyzed; the only movements being present are those of the hands and feet. She is unable to turn to either side or to assume the semi-erect position. She can slightly flex and extend the head but cannot rotate it to either side. When she is held in the semi-erect position the head falls by its own weight backward in a perfectly limp manner.

The muscles of the face, throat and larynx functionate normally. The tongue comes out straight and presents no fibrillation or atrophy, no bulbar symptoms are present. The ocular movements are normal as are the optic disks and retinae.

The greatest paralysis is in the proximal parts of the extremities, that is from the hips down and from the shoulders to the elbows. Curiously enough the flexors are most involved. The patient is unable to raise either leg from the level of the bed. She can slightly abduct the lower limbs but cannot adduct them. She cannot flex the legs upon the thighs or the thighs upon the abdomen, when the legs are placed in a flexed position she is unable to extend them. The toes can be flexed or extended and the feet can be slightly extended onto the legs. The upper extremities are rather less involved. The patient can make use of the extensors of the fore-arms much better than the flexors. The greatest paralysis is in the arms from the shoulders to the elbows. All movements induced by the muscles of the shoulders are lost. The fingers can be extended or flexed and the hands can be extended upon the fore-arms; abduction and adduction of the arms is lost. There is no actual foot or wrist drop. Measurements of the circumference of the thighs and legs as well as of the arms and fore-arms showed no muscular wasting.

Sensation.—There is no muscular or nerve tenderness. There is no loss of muscle sense. No diminution or loss of tactile sense. The temperature sense is perfectly preserved. The sense of location is normal and asteroagnosis is preserved. There are no areas of hypo or hyperesthesia and no paraesthesiae exists.

Reflexes.—The patella and tendo Achillis jerks, as well as the tendon reflexes of the upper extremities are absent. The plantae, umbilical and epigastric reflexes are absent. Menstruation has been normal and the bladder and rectal reflexes are under perfect control. Her mind is perfectly clear and at no time prior has it been otherwise.

Heart and Lungs.—The pulse is eighty per minute, regular, vessel walls not thickened. The Riva Rocci instrument showed a systolic pressure

of 130 M. Hg. The heart sounds are normal, no adventitious sounds are present. The lungs present nothing abnormal.

Spleen.—The splenic dullness begins at the eighth rib in the mid-axillary line and extends to the costal border, it is freely palpable. The lymph nodes are not enlarged.

The liver dullness is normal.

Urine.—The urine had been repeatedly examined by Dr. Curtis and found free from albumen, sugar, blood and casts. Dr. Curtis recently informed me that she gradually improved and three months after the onset had regained complete use of the paralyzed muscles. He states explicitly that no sensory symptoms occurred after I saw her and that she never lost control over the sphincters and that no evidence whatsoever of muscular atrophy could at any time be detected.

CASE 2.—A case of acute ascending paralysis of the type of Landry with recovery. Apparently following a la grippe infection.

Mr. A, aged thirty-eight, married, occupation butcher, drinks moderately. Had typhoid fever several years ago. Otherwise he has had good health. Present illness began October 6, 1901, with fever, chilly sensations, general pains and aches, headache and pains in the elbow and shoulder joints. I made a diagnosis of la grippe and prescribed accordingly.

October 8th.—Seems much improved, has some muscular soreness, but no pains, has a diffuse bronchitis, temperature 101, pulse 100, regular and strong.

October 10th.—His wife stated that the previous evening, she noticed he could move his legs only with great effort and could not turn in bed. I found him quite delirious, with almost total paralysis of the lower extremities and weakness of the arms. His complexion was dusky. Respirations were rapid, thirty per minute and labored. The neck was not rigid and the head could be moved in all directions. The pupils were equal and reacted normally. The eyeball movements were not restricted. The facial muscles were symmetrical and the tongue protruded straight. He was unable to arise to a sitting position and could not move to either side.

October 11th.—His arms rested quietly at his sides in a position of adduction with slight flexion of the forearms. He could not turn to either side or sit semi-erect in bed. He was able to flex the left forearm but otherwise motion was completely lost in each member. All motion was lost in the lower extremities save a slight ability to flex and extend the toes of each foot. There was double foot-drop. The feet were mottled and purplish but there was no edema. All sensations were intact. The deep and superficial reflexes were lost. He had complete control over the sphincters. There was no muscle or nerve tenderness. The muscles were flabby but there was no apparent muscular wasting. The diaphragm movements were normal. The electrical reactions were normal. He had a low muttering delirium.

October 12th.—Condition same as above. Is unable to move in bed, the only movements remaining are those of the head. The cranial nerves are intact. Temperature 103, respirations 40. The delirium continues

and he has passed urine involuntarily. He sweats profusely, drenching the bed-clothes. The urine is very highly colored, sp. gr., 1.024, and contains a trace of albumen.

October 13th.—Morphia one-fourth grain and bromidia two drachms were given and he had a good night. He is less delirious, seems brighter and has taken considerable nourishment. He can flex the feet upon the legs slightly. The temperature is 103.6, the pulse 120. The heart and lungs are normal.

October 14th.—Morning temperature, 103, pulse, 100, respirations 38. Complains of a numbness in the fingers and toes. No ataxia. Sensations are intact. No muscle or nerve tenderness. The electrical reactions are normal. The cranial nerves are intact and the delirium has almost ceased. Controls bladder and rectum perfectly. Is unable to move in bed, but he is able to move fingers slightly and to move his feet a little better, but cannot raise his legs from the bed or separate them from each other. The movements of the diaphragm are normal and no bulbar symptoms are present.

October 20th.—The patient is much improved; he is able to raise the feet slightly from the level of the bed, moves the fingers and toes freely, flexes and extends the hands. All reflexes are absent. The temperature is 100, pulse 80 and respirations 26.

November 1st.—The temperature and pulse are normal. The heart sounds are feeble. He can draw his legs up, moves feet well and can abduct and adduct the legs and flex and extend the thighs, but can elevate them from the bed but slightly, foot-drop is still present. The movements of the upper extremities are rapidly improving. The hand movements are almost normal. He can flex and extend the fore-arms. The arm movements are still restricted. The patient is still unable to turn to either side or to sit semi-erect. The electrical reactions are normal. Sensations were carefully tested and found normal.

December 1st.—The patient is able to stand and take a few steps. Moves arms fairly well but is unable to bring them to a right angle with the body. The sensations are normal. The muscles are still flabby but do not appear atrophied. The electrical reactions are normal. The patellar reflexes are present. Improvement was from now on very rapid and he resumed his duties at the market January 15th. A careful examination made several weeks after recovery failed to elicit the slightest muscular atrophy.

The above described cases are from a clinical standpoint typical examples of the acute ascending paralysis of Landry and fulfill all the requirements as given in the definition of that disease by Landry with the one exception that they both terminated in recovery.

The first case having followed so closely an attack of measles, lends support to the fact that the materies morbi of that disease was also the causative factor of the paralysis. Its

differentiation from the two diseases which it most clearly resembled, acute fulminating infectious multiple neuritis and the adult type of polio-myelitis seems perfectly possible. The paralysis involved chiefly the proximal parts of the extremities; there was no foot or wrist drop and the patient was able to move the fingers and toes as well as to flex and extend the hands and feet. These facts together with the complete preservation of all forms of sensation and the entire absence of muscular wasting or nerve or muscle tenderness, are sufficient reasons to exclude multiple neuritis.

The wide spread motor paralysis certainly resembled certain cases of infectious polio-myelitis but I have never seen a case of polio-myelitis with such extensive paralysis as this case showed, without some permanent muscular atrophy; and I believe with Buzzard that the complete restoration of all the paralyzed muscles to their normal functioning without the slightest remains of muscular wasting, are sufficient in this or in other similar cases to sharply differentiate them from polio-myelitis.

The second case was also one of those rare forms of acute ascending paralysis of the type of Landry with recovery. The interesting features of the case was the mode of onset, doubtless following an acute infection possibly la grippe; the invasion in a rapidly ascending manner of the muscles of the extremities and trunk; the absence of bulbar or objective sensory symptoms and the complete restoration to function, in about eight weeks, of all the paralyzed muscles without muscular atrophy or altered electrical reactions. The rapidly ascending course of the paralysis without nerve or muscular tenderness and without muscular atrophy or electrical changes would exclude, in this case, both multiple neuritis or the acute adult form of polio-myelitis.

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THE BIER-KLAPP SUCTION METHOD AS AN AID TO TREATMENT IN SUPPURATIVE CONDITIONS OF THE NECK.

Read at the First Annual Meeting of the Third District Branch of the Medical Society of the State of New York, held at Albany, October 22, 1907.

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The treatment of inflammations and suppurations by congestive hyperemia as advocated by Bier received a considerable impetus when in 1905 Klapp published the suction modification of Bier's treatment. The uses to which this method has been applied and the instruments that have been devised for administering it are far too numerous to be mentioned, but from the frequent reports of cases successfully treated and from the ever-increasing wealth of literature on the subject, it would seem

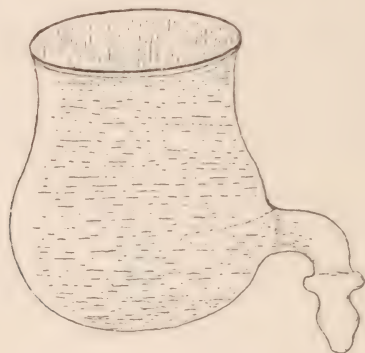
that the suction method of treatment is finding a secure place as a therapeutic agent of distinct value.

I wish to report three cases which demonstrate the value of the suction method as an aid to treatment in suppurative conditions in the neck.

Case 1. The patient was a man aged about forty years, and complained of discharging sores on the left side of the neck.

There was a marked tubercular family history.

The patient was operated upon in London, about one year ago, for tubercular glands of the left side of the neck, and he states that at that time some of the glands had broken down. The wound suppurated about three weeks after the operation and although the resulting sinuses were frequently curetted, cauterized, packed and irrigated they remained open and discharging.



On examination, the patient was a well-nourished individual. Skin and mucous membranes were a good color. The lungs were clear throughout on auscultation and percussion and the heart sounds were normal. On the left side of the neck occupying the occipital triangle, there were three large sinuses which discharged a thick yellow pus. Between the sinuses two masses about 1 c. m. in diameter could be felt. These were infected glands. The scars of a previous operation were visible. The tissues for a considerable distance around the sinuses were reddened and swollen and evidently the seat of a marked inflammation and infection.

The patient was treated for about three weeks by the suction method at the end of which time the area of inflammation and infection had markedly diminished and the discharge was much less. An operation was now deemed advisable and on February 23, 1907, the patient was operated upon at the Samaritan Hospital in Troy. The infected glands were removed and the surrounding tubercular infected tissue curetted away. A considerable area of diseased skin had to be sacrificed and the wound had to be left practically open with extensive drainage. On the third day following the operation, the suction method of treatment was again started and in only a little over a week the wound had healed with

the exception of the skin covering. The skin healed eventually and at present there is no evidence of a return of the trouble.

Case 2. The patient was a small girl, aged about twelve years and complained of a discharging sore on the right side of the neck.

One sister had had tuberculosis. Otherwise, there was no tubercular family history.

The patient was first seen by me in April, 1907, and gave the history of having had an abscess form on the right side of the neck. The abscess had been lanced one week previous to the time that I saw the patient.

On examination, the patient was a rather delicate-looking child. Skin and mucous membranes rather anemic looking. Lungs clear throughout on auscultation and percussion. Heart sounds clear. On the right side of the neck, in the upper part of the superior carotid triangle, there was a globular swelling about one centimeter in diameter which had been lanced and was discharging a thick, yellow pus. There was a large inflammatory zone around the discharging sinus.

The opening of the discharging sinus was enlarged and on the following day the suction method of treatment was started. The inflammation subsided quickly and the discharge rapidly diminished. For several weeks there was a very slight discharge and then the sinus seemed to be completely healed. In August, 1907, the abscess formed again and broke in the scar of the original sinus. The suction treatment was started again and the sinus healed up in ten days, but what seemed to be an enlarged gland could be palpated deep in the tissues.

The patient was operated upon August 20, 1907, at the Leonard Hospital in Troy, and a large infected gland removed. Practically a clean operation was possible. The skin was closed leaving only a very small drain and the wound healed up quickly without suppuration.

Case 3. The patient was a woman, aged about forty years, and complained of an abscess on the left side of the neck.

There was no tubercular family history. The patient was first seen in March, 1907, and gave a history of having had a swelling on the left side of the neck for several months. Recently the swelling had enlarged rapidly and become very painful.

On examination, the patient was a fairly well nourished individual. Skin and mucous membranes a good color. Heart sound clear. Lungs clear throughout on auscultation and percussion. On the left side of the neck in the superior carotid triangle there was a fluctuating swelling several centimeters in diameter. The skin over the swelling was reddened and sensitive.

An incision at the apex of the swelling was made under ethyl chloride anesthesia and about an ounce of thick creamy pus evacuated. The wound was packed and the next day suction treatment was started. In one week all discharge had ceased and the sinus was healed. The patient was not seen again until August, 1907, when she presented herself again with practically the same condition only, if anything, the inflammation and infection was more extensive. The abscess was opened again and the suction treatment started. The area of inflammation rapidly diminished

and the discharge was markedly reduced in amount but complete healing was not possible.

The patient was operated upon August 30, 1907, at the Leonard Hospital and the cause of the trouble was found to be a small infected cyst lying very deep in the tissues of the neck. The cyst was removed but there was soiling enough of the wound to prevent complete closure and extensive drainage had to be used. The wound is now healed with no evidence of return of the trouble.

It can readily be seen that the suction method of treatment is of distinct value in cases such as I have reported, but it is doubtful if it would alone ever cure such cases. There is always an infected gland or cyst in the depths of the diseased tissue acting as a foreign body and this must be removed before complete healing will take place. As a preliminary to operative measures, however, the suction treatment is unexcelled as a therapeutic agent.

It is doubtful if there is anything in surgical practice that is any more tiresome to treat than a severe case of suppurating glands of the neck. The first impulse of the surgeon, both for his own satisfaction and the relief of the patient, is to at once operate and remove the offending glands, but in the majority of cases such a course is deemed impossible or unwise. The area of infected tissue is usually extensive; there is no distinct line of demarkation between diseased and healthy tissues and an operation that would be in any way radical would mean a soiling and infecting of the entire field of operation; inability to properly close the wound and the employment of extensive drainage, all of which tend to the formation of extensive and unsightly scars.

Without the use of the suction method of treatment, all that can be done in these cases is to establish the best possible drainage: treat the discharging sinuses by packing and irrigation, and wait until the inflammation has subsided sufficiently so that a fairly clean operation can be performed. This usually means a wait of at least several months and in the meantime the infected glands are remaining in the tissues.

With the suction method of treatment, the preliminary period before operation can be shortened in a remarkable degree and a much more satisfactory operation is made possible. Following the use of the suction treatment, the inflammation and infection subside rapidly; the line of demarkation between diseased and healthy tissue becomes distinct; and the infection is gathered

together into a focus, making the proper point for operative attack more evident. In some cases, there may be an actual healing over on the surface thus making possible a perfectly clean operation with no soiling or infecting of the tissues; absence of all but a very small drain; and practically complete closure of the wound with comparatively little resulting scar.

There are numerous forms of apparatus that can be used in giving the suction treatment; but if nothing better is to be had, a small glass funnel connected up to any bulb or syringe that will produce suction can be used. One of the best forms made is an aspirating cup similar to that pictured in Fig. 1, which can be attached to any form of aspirating syringe. In my own practice, I use a Dieulafoy's.

The suction treatment is started as soon as the case presents itself and is best given every day or every second day. The suction is applied strongly and the pus and blood is sucked from the wound until it is practically dry. The treatment is kept up each time from fifteen minutes to half an hour and the passive congestion seems to have a better action if the suction is removed and reapplied every two or three minutes. The treatment is continued until the inflammation has subsided, the discharge ceased, or, as happens in some cases, until the sinus has healed over.

THE RELATION OF THE GENERAL PRACTITIONER TO THE SPECIALIST AND LABORATORY WORKER.

The President's Address, read at the Annual Meeting of The Medical Association of Troy and Vicinity, January 14, 1908.

By R. H. IRISH, M. D.

This is said to be an age of specialism, and so it is, and so it should be. This is true in all lines of human endeavor, but more especially is it true of the practice of medicine. Strictly speaking, specialists and specialism have been known since the remotest ages. In the time of the old Romans the surgeons were divided into the *Vulnerarius* who treated wounds with dressings and *carnifex* who operated for stone and hernia. In the middle ages, there were oculists, worm doctors, and as history repeats itself, there were also those who made a specialty of driving out the evil spirit, even as the self-styled Christian

Scientists attempt to do with the "evil thought" to-day. But even in this direction there has been progress as far as the science of medicine is concerned, for this appeal to the hysterical element was then connected with medicine, while to-day, it is as widely separated from it as the north is from the south. However, this is interesting chiefly from a historical standpoint, and has practically no connection with the modern development of the specialties. Practically, we may consider that the first branch from the parent trunk of medical science was surgery, which, in olden times, was performed by the barbers, and looked upon with scorn by the practitioners of medicine.

But gradually, very gradually, this tiny off-shoot began to attract the attention and receive the support of medical men until at the beginning of the sixteenth century, we find its champion in Ambrose Paré, who defines surgery as "a quick motion of an intrepid hand joined with experience." From this time on, this branch began to flourish until at the beginning of the nineteenth century it threatened to outstrip the parent trunk. We then find this first, broad specialty represented by such worthy men as Sir Ashley Cooper and Sir Benjamin C. Brodie. Since that time, with each succeeding year, the tendency has been more and more toward the development of the specialties, until within the past few years, the divisions and sub-divisions of the practice of medicine have become so numerous that they outnumber the organs and members of the human body, for many specialists now devote themselves to the study or treatment of a single disease.

The literature on these special subjects has become so voluminous that one man in a single lifetime can hardly expect to master the literature of any one of these so-called specialties. It is safe to say that most of the great advances and discoveries that have added so much to the general practice of medicine, have come about through the development of the specialties, through the efforts of workers in a single field. The future, in this respect, will, without doubt, be but a repetition of the past. Those that blaze the way will ever be men who work along a single line.

Therefore, to be a leader in medical thought or practice, one must limit his field.

But there must be many to follow where but few can lead, and the tendency in the past few years has been to rush too

quickly into the practice of the specialties. A man to be truly successful in a chosen field, must have a broad, general knowledge of the practice of medicine, as a foundation upon which the superstructure of his special knowledge rests. Dr. S. MacCuen Smith, in a recent address on "Specialism in the Relation to General Medicine," says that "ten years in private practice will prove an adequate foundation for the broad-minded specialist."

This is a conservative statement and I believe that eight or ten years of general practice is almost an essential for the successful prosecution of a specialty. It is certainly unwise, if not almost criminal, to attempt to practice a specialty without an adequate knowledge of general practice. This, of course, does not apply so strictly to bacteriology or laboratory work, though these are in the truest sense, specialties of medicine.

When a man, after graduation, starts at once into special practice, with, perhaps, a year or two in some clinic or hospital along his special line, his horizon is necessarily limited, and the mistakes made by some of these ready-made specialists, would be amusing if they were not such a serious matter. To illustrate, I recently saw a case that had been under the care of such a specialist and had received treatments every other day for laryngeal trouble and had been told to eat plenty of roast beef and steak and take plenty of exercise, long walks, etc. When it became more and more difficult for him to eat the steak and walk to the physician's office, the specialist was discharged. When I saw him, which was less than a week after he had been given the above advice, I found the patient suffering from a moderately advanced pulmonary tuberculosis with the physical signs well marked, marked dyspnea, temperature 102° and pulse of 120. He stated that with all the treatments he had received his lungs had never been examined.

In the practice of a colleague, a patient suffering from shortness of breath, consulted an inexperienced, but well meaning specialist, and was told that the trouble was due to a fatty tumor in the neck which must be removed. The patient not being quite satisfied, consulted the colleague above mentioned, who upon examination found a considerable accumulation of normal adipose tissue in the neck, and a plural effusion in the right side. It is needless to add that after aspiration of over two quarts of fluid the dyspnea disappeared.

In both of these cases the error in diagnosis and treatment

was undoubtedly due to lack of experience in general practice on the part of the specialist, and men of this class are bound to bring discredit not only upon their specialty but upon the general practice of medicine as well.

Since, with the rapid progress of medical science, the specialist has become a necessity—for it is useless for one man, in a single life-time, to attempt to master the general practice of medicine—let us have broad-minded specialists. In the words of Emerson, "The intellect is a whole and demands integrity in every work. this is resisted equally by a man's devotion to a single thought and by his ambition to combine too many." To apply this to our own subject the general practitioner should not attempt to make a specialty of everything, and the specialist should not attempt to bring everything within his specialty.

We often hear it said that there will soon be no place for the general practitioner. If this were true, we might look forward to the ludicrous spectacle of a patient being treated for his heart by one specialist, for his nerves by another, while a third treated his throat, etc., etc., while the patient might die of some ailment that was not receiving treatment.

But this is not true, for in this age of specialism, the need for the general practitioner is greater than ever. But by this I do not mean the old time empirical germ-carrying "forty visit a day" general practitioner, who in his blissful ignorance, conveyed almost as many diseases as he cured and from whose judgment there was no appeal, for he has served his time, and is rapidly sinking into inevitable obscurity.

In the words of Whittier:—

"The outworn rite, the old abuse,
The pious fraud transparent grown,
The good held captive in the use
Of wrong alone,—

These wait their doom, from that great law
Which makes the past time serve to-day;
And fresher life the world shall draw
From their decay."

The typical general practitioner of to-day is of quite a different stamp. He has come to realize the truth of the comment of Plato that "education is a life-long business" and that in

order to hold his own in practice and more particularly to command the respect of the members of his own profession, he must keep abreast of the times. Therefore, he is as well versed in the general principles of surgical asepsis as the surgeon himself. He is as well grounded in the general principles of bacteriology, and as familiar with the ordinary uses of the microscope as the bacteriologist or laboratory worker. He can perforate the eardrum with equal skill with the otologist. He can use the ophthalmoscope for ordinary purpose of diagnosis as skillfully as the oculist and last, but not least, he has learned that the management of labour requires the same aseptic precautions as a major surgical operation. In other words, for all the ordinary ills and emergencies of medical practice, his examination and treatment of a patient are as skillful and up-to-date as the specialist.

But it is in the diagnosis and treatment of the more obscure conditions, and those requiring unusually skillful manipulation or examination, for which he has neither the time nor experience, that he calls upon the specialist.

The general practitioner of to-day knows his limitations, and does not consider it a sign of weakness to say "I don't know," or to ask for consultation. To quote from an eminent authority, "It is not a sign of strength, but of weakness, if a practitioner misguided by a false sense of shame, obstinately refuses to recognize that he has arrived at the end of his own powers, and if with equal obstinacy he refuses to let his patient have the benefit of advice in conjunction with himself."

But what is the function of the general practitioner in relation to the specialist and laboratory worker? Why, gentlemen, he is "the leaven that leaveneth the whole." Without him all would be confusion and chaos.

The quack who has evaded the law would be on an equal footing with the qualified specialist, and the exaggerated ideas of some enthusiast in a special line would be accepted by the laity as facts. Then it is the first duty of the general practitioner, when consultation along a special line is indicated or desired by the patient, to consider the qualifications of the various specialists, and to guide his patient to the one best qualified.

Or if the case is a difficult one, the patient is advised to consult two or three specialists, the blood and sputum or other specimens are examined and when the evidence from these various sources is all in, the family physician considers all of

these facts before arriving at his own diagnosis or giving his advice about the case.

Perhaps in consulting a specialist an operation has been advised, and the patient returns to the family physician for his opinion. This gentleman has had some previous experiences along this line and knows that many of the conditions which are being operated upon daily by the specialist, reach an equally favorable termination, without operations with the risks attending the same. Therefore, he carefully weighs the chances with and without an operation before giving the advice which is usually accepted by the patient. There is a general and perfectly natural tendency among specialists to over-estimate the importance of their particular specialty, and to attribute all the ills of the human body to a diseased condition of the particular organs to which they minister. It is only through the agency of the general practitioner that this tendency can be kept within bounds, and a proper valuation placed upon the findings of the specialist.

It is also true that specialists frequently disagree. We will take for example, the condition of appendicitis. One specialist says operate as soon as you are sure of your diagnosis, and quotes a few hundred cases to prove that patients never die who are operated upon early in an attack. The second specialist, with equally valuable statistics to prove his point, advises waiting until an operation becomes a necessity or an interval operation may be performed.

Then again in case of partial prolapse of the uterus one gynecologist will say that the descent of that organ is due to a laceration of the pelvic floor, the early repair of which will prevent or cure the condition. The second will assent as positively, that the laceration of the pelvic floor has nothing to do with it, and will cite cases of complete laceration of the pelvic floor, which have existed for years without descent of the uterus, to prove his point. He claims that the trouble is with the ligaments supporting the uterus and that nothing will do but shortening these ligaments or supporting the uterus from above. The third specialist believes that both of these things are factors, and that a combined operation is the only thing. Now who is to decide which is right? The lay patient certainly is not in a position to do so. The specialist is committed to this or that opinion and cannot readily change.

But the general practitioner, who should keep himself aloof from all moorings and afloat, weighs the evidence on both sides and gives the patient the benefit of his conclusions and directs him to the particular specialist whose views on the subject coincide with his own. He is frequently in a much better position to know the final results, in many cases that consult the specialist, than the specialist himself. For instance, the specialist operates upon a case or recommends a certain line of treatment, and the patient soon passes out of his observation, and he considers him cured, while the general practitioner, who referred the case to him follows out the case, and knows the final result, which may be quite at variance with the result anticipated.

Now, just a few words about laboratory diagnosis. Only a very few years ago, the value of laboratory diagnosis was greatly overestimated, but we are now returning to the older and safer methods of placing our chief reliance upon the clinical symptoms and physical signs, and considering the laboratory findings as merely factors in the case. For instance, the presence of albumen and casts in the urine was at one time considered positive evidence of nephritis. Tubercle bacilli in the sputum were supposed to be the early and only positive evidence of pulmonary tuberculosis, and the presence of Klebs-Loeffler bacilli in a culture from a suspected throat was considered the only positive proof of diphtheria. We now know that a trace of albumen and a moderate number of casts may be present in the urine in other conditions than nephritis; that in the very definition of an incipient case of pulmonary tuberculosis adopted by the National Association for the Study and Preservation of Tuberculosis, the finding of tubercle bacilli is not considered the all-important factor for it says "tubercle bacilli may be present or absent." As a matter of fact, if we wait for their appearance in the sputum, not infrequently, the case may long have passed the incipient stage.

We also know that the finding of Klebs-Loeffler bacilli in cultures from the throat is far more important than their absence. On the evidence of some of our most careful diagnosticians we know that many cases of true diphtheria are reported negative from the laboratory. If we would give our patient a fair chance for recovery, we must make our diagnosis and administer antitoxin irrespective of and long before we can obtain this report. In other words, there are but few conditions in

which it would not be safer to stake our reputations upon the clinical symptoms and physical signs alone than upon the laboratory findings. But taken together with the clinical history the value of the laboratory findings cannot be overestimated. Every physician should possess the necessary reagents and equipment and be able to examine, understandingly, all of the ordinary clinical specimens, such, for example, as the quantitative and qualitative estimate of sugar, albumen, urea, etc., in the urine, and the microscopical examination of fresh specimens of the urine, blood, sputum and purulent discharges.

As far as his time and circumstances will permit, he should make these examinations himself. But for the more complicated laboratory examinations and those requiring an unusual expenditure of time, such as the growth of cultures, the hardening and sectioning of pathological specimens, inoculation tests, etc., he will usually depend upon the specialist. But, however, obtained he will give these findings due weight in arriving at his diagnosis or giving his opinion of the case.

So in these various ways, the general practitioner is not infrequently placed in the position of the judge or referee, who carefully considers all the evidence obtainable relative to the case in hand before rendering his decision.

While acting in this capacity or in the simple act of referring a patient to this or that specialist, he assumes certain responsibilities to which his eyes are not closed. For whatever the outcome of the case may be, the family physician is held largely responsible for this result, both by the patient and by the laity in general.

The patient referred to you by the general practitioner is, therefore, a sacred trust, for the very act of referring the case to you is an expression of his confidence in your judgment and ability, and no matter how busy you may be, each case referred to you must be given the most careful consideration and the benefit of your best judgment and advice.

In this relation of attending physician and consultant, misunderstandings will, at times, occur, and occasionally without the fault of either party. These occasional instances where the innocent suffer, are most to be regretted, and if we would adopt the advice given by Osler, there would be less occasion for such regret. He says, "It is the confounded tales of patients that so often set us by the ears, but if a man makes it a

rule never under any circumstances to believe a story told by a patient to the detriment of a fellow-practitioner—even if he knows it to be true!—though the measure he metes may not be measured to him again, he will have the satisfaction of knowing that he has closed the ears of his soul to ninety-nine lies, and to have missed the hundredth truth will not hurt him.” But when a consultant finds that he has more than the average number of such differences on his hands, he had better resort to introspection for the remedy. For these men I have endeavored to formulate a few don’ts which from the standpoint of the general practitioner, would do much to obviate these causes of dissension within our ranks.

Don’t forget that you are human, and being human are likely to err, and in fact, frequently do err, both in judgment and diagnosis. Even your judgment is not final, and it is no worse for you to say I don’t know, when you don’t, than it is for the general practitioner. Don’t forget that it does not detract from your reputation to discuss with the attending physician the possibilities and probabilities and to go into the minute details of a case into which you have been called as counsel. You will usually find that you have an attentive and appreciative listener and a not unwise counsellor.

Don’t, above all, forget that you are still members of the medical profession and are subject to the same rules of professional etiquette in your relations with your fellow practitioners, as those observed by the profession at large, and if you wish to hold the good opinion and receive the support of the general practitioners, you must guard these relations. When you are consulted by a patient it is your duty to find out if he is under the care of another physician, and this knowledge should govern your future relations with the case.

I have known men who would not have the courage to openly do an unprofessional thing, to studiously avoid obtaining knowledge in this way and then when they were brought face to face with the facts to say, “Oh, Doctor, I did not know it was your case.” These men are perhaps not guilty of the sins of commission, but rather of the sins of omission.

And finally, don’t forget that when you are called to see a patient or a patient is referred to you by the family physician either for diagnosis or treatment, that when that diagnosis is

made or the condition for which he was sent to you is cured, your duty to that patient ceases.

Then gentlemen, in conclusion, with the present development of the science of medicine, the general practitioner can not do without the specialist and the specialist to be truly successful, cannot well afford to do without the good will of the general practitioner.

Then with the golden rule and the principles of professional ethics to guide our course, let us general practitioners and specialists co-operate, one with the other, working for the benefit of humanity and the uplifting of the standards of the medical profession. By so doing, we will retain the respect of our fellowmen and become a greater power in the community, and increase our own self-respect, which is not less important.

OBSERVATIONS MADE IN THREE HUNDRED CONSECUTIVE CASES OF SEVERE TRAUMATISMS WITH ESPECIAL REFERENCE TO FRACTURES.

Read before the American Röntgen Ray Society at their Annual Meeting held in Cincinnati, O., October 2, 3, 4, 1907.

BY ARTHUR HOLDING, M. D.

Of the 300 cases, eighty-seven per cent. were fractures, situated as follows:

	Per Cent.
Arm	45
Leg	44
Shoulder	15
Ankle	9
Face and Neck	9
Hip and Pelvis	7
Foot	5
Hand	4
Wrist	4
Thorax	1
Back	1
Dislocations	9
Fractures and dislocations	6

	Per Cent
Epiphyseal separations	0.6
Green-stick fractures.....	4
Non-union	2
Intra-capsular fracture—hip	3
Extra-capsular fracture—hip	1.5
Fracture os calcis.....	3
Traumatic neuritis simulating dislocation or fracture.....	6

I wish to call attention to the following points:

First: The inadequacy of routine methods of treatment of fractures according to their location without knowing the exact shape and position of the fragments and allowing for the distortion of muscular spasm. For instance, it is common routine treatment to put every shoulder case up in a Velpeau bandage or every fractured hip up in a straight Buck's extension. The relaxation of muscles while the patient is under an anesthetic and the masking of deformity of bone fragment by symmetrical contour of overlying soft parts seems to tempt many to believe that the fractured ends of the bone are in correct apposition. Systematic X-Ray examination *after* the bones are set will demonstrate this to the painstaking surgeon and enable him to adopt such changes in dressing and position to insure superior results and with such a minimum of "shortening" and deformity as to make his work conspicuous.

In this connection permit me to recall to your mind the deformities present in typical fracture at the hip and shoulder joint where the broken upper fragment is short and has muscular attachments on its tuberosities, which throw this fragment entirely out out of line with the shaft of the bone. This short fragment of bone cannot be controlled, consequently the position of the arm or leg must be so modified as to adapt the shaft of the bone with the position of upper short abnormally placed fragment. This will lead to placing these legs and arms in many awkward positions which may look like apparent distortions. Results will show that there was no "real" distortion. Anyone who frequents hospital wards knows that it is much easier and that there is an insidious temptation to put the legs or arms up so that there is no "apparent" deformity, as for instance, the routine Velpeau or Buck's extension, when ultimate functional results and the X-ray picture show that there was "real" deformity.

Second: That it is noticeable that the more perfect the coaptation of the fragments, the less is the amount of callous. I have observed instances in which the coaptation was so perfect that at no time during the treatment of the case could any callous be distinguished on the skiagraphic plates.

Third: That neglect of proper approximation leads to non-union and skiagraphy would not only enable one to avoid non-union in a majority of cases but a skiagraphic examination will frequently enable the surgeon to overcome the non-union by modifying the position of the parts so as to allow the fragments to come in apposition. A case of non-union of a fracture of the middle of the shaft of the humerus was referred to me for skiagraphic examination. The accident had happened eight weeks previous; the patient's physician had put the patient's arm up in plaster of paris. Eight weeks later the plaster was removed but the patient's arm was limp and there was no apparent union of the bone. The X-ray picture showed that the line of fracture was step-like, and the doctor in putting the arm up in the routine manner had rotated the fragments away from each other so that they were not coapted. A surgical operation was recommended, but pending a decision in this matter I put the arm up in plaster, ignoring the apparent deformity but correcting the real bone deformity by having the arm carried straight at the side, palm forward, instead of carrying the arm across the body in the usual manner. The patient made a perfect recovery without an operation.

Fourth: That radiographic examination *after* the bone is set is of as much, or more importance, than radiographic examination before the bone is set. Let anyone who doubts this take X-ray pictures of his cases after setting the fractures and the number of times he will modify his dressings will verify my statement.

Fifth: That circumflex neuritis is a common result of traumatism of the shoulder and that it frequently simulates a dislocation of the shoulder. In this series there were eighteen such cases. Although musculo-spiral neuritis and paralysis in connection with arm injuries have been frequently described, I have failed to find mention of the circumflex neuritis which in my experience has been the commonest traumatic nerve lesion. The patients usually complain of pain in the shoulder, they cannot fully abduct the arm, put their hand to the top of the head nor

to the middle of the back between the scapulae; muscular limitations, which are most noticeable when the patient attempts to comb the hair or button garments in the back. There is muscular atrophy of the deltoid, infra-spinatus and teres minor muscles; the supra-spinatus muscle is also frequently involved. The atrophy of the deltoid with the resultant prominence of the acromion process gives the shoulder the appearance commonly seen in dislocation. The same nerves that supply trophic impulses to the skin and muscles of the shoulder also supply trophic impulses to the bones of the shoulder joint, and the patient suffers with atrophic ostitis characterized by the exquisite tenderness of the bones, limitation of motion of the joint, a subjective as well as objective sensation of grating in the joint. The trophic disturbances in the skin are commonly evidenced by the deep imprint of the underclothing seams left on the diseased side in distinction to the absence of any similar marks on the normal side. The reaction of degeneration was not present in any of my cases although the response to electrical stimulation was sluggish and frequently fascicular, intermittent contractions or muscular twitchings. In skiagraphs the well-known evidences of bone atrophy were present and the outline of the obliterated epiphyseal line becomes apparent.

Sixth: A common fracture at the shoulder is one in which the greater tuberosity of the humerus is pulled off by muscular violence. This fracture produces no palpable deformity, but is characterized by great bone tenderness, swelling and late ecchymosis.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
DR. A. R. MOULTON, FIRST ASSISTANT PHYSICIAN, PENNSYLVANIA
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(Continued from April Annals, page 357)

CHAPTER VII.

Insane people, being usually very susceptible to what goes on around them, may be greatly benefited or injured, by a change of surroundings. Although there was no noticeable change in Ruth, after her removal to the sick ward, it was a break from surroundings that were terrible to her. She saw other faces, and they did not remind her, particularly, of people she had seen before. She thought that the attendants were pleasant girls, who did not treat her as though she was different from other people. Although she brought most of her delusions with her, never, in all her hospital life, did any place seem quite so terrible to her as the ward where she passed her first months.

Ruth chanced to be seated near a window. It had been a long time since she had looked upon the ground, and she was puzzled. Could that be snow falling? It must be summer, yet there was snow and ice upon the ground. It could not be real snow. They were trying to deceive her. She felt sure they had a way of throwing water into the air and freezing it.

A woman was sitting upon the floor, with her hands clasped around her knees. She was moving herself slowly along, by the motion of her body. Ruth thought it supernatural; but it did not frighten her. It was only the living that she feared.

An old lady sat near her, called "Grannie Mack." For some reason, Grannie did not go to the dining room for her food, but it was placed upon a chair by her side. Such queer looking food, it seemed to Ruth. It was unnatural, she was sure. It

looked to her smooth and glossy, as though there were no substance to it. Grannie would hold it toward Ruth in such a mocking, provoking way. These strange things diverted her mind, somewhat, from her more terrible delusions. One day when the food looked, to Ruth, stranger than usual, she made a desperate effort to solve the mystery. Rising from her seat, she snatched something from off Grannie's plate, and endeavored to taste it. She was no wiser than before, for the old lady raised such a clamor, that the attendants came running to see what caused the outcry. Ruth was so frightened that she did not remember whether the food tasted right or not. The doctor, not understanding why she made the raid upon Grannie's plate, offered her food, which she refused.

One morning, Ruth was sitting with her eyes closed, as she was in the habit of doing, brooding over the many fancies that crowded her brain. She heard voices and footsteps coming toward her. Some one knelt on the floor beside her, and took her hand saying, "Ruth, won't you speak to me." She did not recognize the voice, and even when she felt a kiss upon her face, she did not open her eyes, thinking it was the doctors, trying to make her speak, so they could mock and laugh at her. They went away, and that afternoon, Ruth heard some one say, "Mr. Campbell was here this morning, to see his wife, and she would not look at him, I pitied him he felt so badly."

Her husband had been there and she did not know him! Why did they not tell her who he was? It was cruel. They must have known that I did not recognize him; for they know my every thought. Perhaps he too, was in the league against her! No, she would not believe that. She must try to get away from that dreadful place, and to find her husband and children. For days Ruth tried to speak, and at last summoned courage to ask to see the doctor. He came, and taking Ruth by the arm, led her from the ward into a dormitory, where there were a number of beds. Closing the door, he asked, "Why did you wish to see me?"

"I want to go away from this place."

The doctor smiled. He saw before him a woman who had not, voluntarily, taken food for months, who had spoken to no one, who had not noticed her husband, when he came to visit her, and yet who was calmly asking to go away.

"How long have you been here, Mrs. Campbell?" he asked.

Ruth did not know, and she made no reply. She thought, "I wish I had not spoken, for he is laughing at me. Every time I speak I make myself worse off."

If the doctor had spoken an encouraging word to her telling her she would soon be well enough to go home, if she would try to do as they wished to have her, if he had talked to her of her husband and children, making her understand that they were well, and that they would visit her soon, it might have helped her; but the opportunity passed by.

Ruth's heart sank heavily within her, and the ray of hope went out, leaving her wild again. Glancing across the room, she saw upon a bed, something that looked to her like meat covered with blood. In an instant, the delusion that she was to be punished for the sins of the world came back to her. The blood was to remind her that she was doomed. She gazed upon it with horror.

The doctor, seeing the look upon her face, led her back to her chair. She sat down, and night settled around her. For months afterwards, she remained in a dumb, hopeless, submissive state. Only once in that time did she rouse herself to action.

Grannie Mack was a constant torment to Ruth. She bore the old lady's taunts and jeers, until, driven to desperation, forbearance ceased. One day, when Grannie was more provoking than usual, Ruth rose from her chair, and struck her with all the strength that she had, and then, stood pale and trembling; listening to the hue and cry she had raised.

"Aren't you ashamed to strike an old grey-haired woman?" said one.

"I don't blame her a bit," said another, "Grannie is always plaguing her."

"Served her right," chimed in a third, "Who would have thought she had spunk enough to do any thing like that?"

"You see, you can't always tell. Ruth Campbell is no fool."

The doctor, passing through the ward, stopped and inquired the cause of the disturbance.

Half a dozen or more voices were raised to enlighten him. One stout Irish woman above the rest, besought him to, "put a strait jacket on the murderin' villain, or we'll all be kilt intirely."

"Small loss when some folks go," put in a pert little woman.

"Go away," said the doctor, somewhat sternly; upon this, they returned to their own personal troubles.

The doctor then listened to the attendant's account of the affair, and very pleasantly said, "Well, well. I think we will let Mrs. Campbell sit in her own room for the present."

The attendant led her there, and seated her by the window. She was thankful to be alone. Although her door stood open, through the day, and the other patients sometimes entered her room, she would not see Grannie, or hear the woman who belonged to the "High Church of England," or another who worried about "Writs of Replevin." She wondered why it was when the doctors seemed so kind to her, that they should try in so many ways to deceive her.

If Ruth had talked openly of her troubles, as did many of the patients, she might have been convinced of the truth. Believing, as she did, that every body laughed at her when she spoke, prevented her from speaking.

Although she had less to try her patience now that she was alone, life was still a burden. She was constantly watching for some opportunity to end her wretched existence. Once, an attendant left a bottle of disinfectant upon the window-seat near her.

"Now," Ruth thought, "is my time." Another thought comes quickly: "They have left it there to try me, and will spring upon me if I touch it." While she was debating the chances in her mind, some one came for the bottle, and it was too late.

Ruth's sisters came together to visit her. She walked with closed eyes when the attendants led her into the reception room.

"Ruth!" She knew the voice that spoke her name, and it was loving, as of old. She opened her eyes. Yes, there were her sisters, and their arms were around her, she felt their kisses of affection, and heard their loving words.

At first she was glad to see them; but, unfortunately, one of them took some oranges from a bag and offered them to Ruth. In an instant every thing was changed. Oranges were yellow and meant fire. Mary's husband who was with her, urged Ruth to eat one.

"Ah!" thought Ruth, "His shop was burned and he is saying, I was the cause. He is cruel, for he must know that I would not do such a thing."

After that, every movement which they made, meant something to poor Ruth. Noticing one of her sisters, sitting with downcast

eyes and folded hands, she thought, "She is mocking me, because I sit that way."

Ruth's friends left her with sad hearts not knowing they had troubled her.

Weeks passed, and the days grew longer. Spring came, and with it, the green grass and the blossoms that Ruth loved so well; but she hardly noticed the change.

One morning, the doctor, in passing through the ward, stopped and said to Ruth, "I think you had better go out for a walk, this pleasant day. You will never get well, if you sit here all the time." Calling one of the attendants, he said to her, "I wish you to take Mrs. Campbell out for a walk, on the avenue, and do not take any one else with you."

Ruth dreaded going, but offered no resistance, when the girl brought her wraps, and led her into the open air. For a while, the change had a good effect upon her, and she felt that she was in the same beautiful world, that she used to live in. The air was full of sweetness; the birds were singing; and early flowers were blooming in nicely fashioned beds beside the walks. There were the dear, yellow Daffodils, just like the ones they used to have at home, when she was a happy girl. They were friendly little faces and Ruth stooped to caress them.

"I wouldn't pick them," the girl said, "the gardener might not like it." Pick them! No, they were too precious. They never picked the Daffies at home.

Continuing their walk farther down the avenue, the girl stopped a moment to exchange a word with the gardener, while Ruth walked slowly on.

What does she see? The waters of the lake!

She runs swiftly towards it. She hears the girl calling her, and soon she is overtaken by the gardener, whose strong hand grasps her roughly by the arm, and she is obliged to go back.

"You must go in now," said the girl, "you ought not to try to run away. The doctor may not let you go out again."

The next day, however, she came again for Ruth, who went willingly. As they passed through the ward, the attendant stopped before an open door, and said, "Come Jennie." A young girl came slowly from the room, without looking up or speaking.

They made their way out of the building, and, to Ruth's astonishment, she found herself in a large yard, surrounded by the building, and a high board fence.

In the yard were some fifty women; some of them, bare headed and without shoes or stockings; some wore strait jackets, and others had their hands confined in leather muffs. They were shouting, jeering, and quarreling, and Ruth stood motionless, her eyes fastened upon the scene before her. Oaths, and vulgarity mingled with the jargon of words that filled her ears. The girl, Jennie, sat upon the ground near by, seemingly unconscious of what was going on around her.

The new comers on the scene, attracted the attention of the crowd, and before Ruth realized where she was, they had surrounded her. They cursed and even spit upon her, and one, bolder than the others, pulled off her hat and threw it as far as she could.

The attendant in charge of the crowd came to the rescue, and drove them away. Ruth would not have cared if they had killed her, but she was ashamed and humiliated at being the butt and jest of a crowd like that. If the ground had opened and buried her alive, she would have been thankful. She must die, she would not live.

The girl, Jennie, sat upon the ground near her feet, mumbling in an imbecile way. Ruth's cup of bitterness was full. A terrible thought entered her brain, a desperate, awful thought.

If she killed the girl, she would be hanged. In her agony of mind, she did not once think of the right or wrong of it; but it seemed her one way of escape. In an instant, she was stamping with her feet upon poor Jennie. The spell passed as quickly as it came. She saw a drop of blood come from Jennie's nostril. What had she done? Never before had she willfully harmed one of God's creatures, and now she had done this terrible thing. She did not fear, or even think, of the consequences to herself; all her prayer now, was for some one to help the girl she had hurt.

The other patients with their attendants had left the yard and they, by some neglect of duty, were alone. Ruth stooped down and tenderly smoothed the brown hair. It had been the work of a few moments, but the time seemed hours to Ruth.

Soon four attendants came running out, and, while two of them lifted Jennie and carried her in, the others took Ruth by the arms and hurried her into the building. One of them struck her a blow upon the head with a bunch of keys, and this made her feel dizzy and stunned. Reaching her room, she was seated

in a chair and left alone. Soon the ward doctor came in and asked her why she hurt the girl.

"I wish to die, and thought I should be hanged if I killed her," answered Ruth, fearlessly and truthfully.

"No," said the doctor, "they would not hang you, but they would call you crazy."

Ruth had not thought of that. Soon the doctor left her, and she sat alone for a long time, wretched and bewildered. Usually, she was put in bed soon after dark; but this night, she sat there until after the clock had struck the hour of eleven, when two attendants entered, carrying a lantern. They led Ruth out of the ward, up stairs, through several halls, into a sleeping room. After undressing her, they put on a jacket and tied her in bed, then left her alone.

Ruth did not sleep that night, she wondered if she had killed poor Jennie. Would she never know? She had not meant to do wrong. Where was God?

Perhaps she had died and this was Hell. She remembered Dante's *Inferno* and the picture of despairing creatures, in a lake of fire, tormented by demons. It seemed quite possible after her day's experience. She hardly dared open her eyes for fear that she might see the flames.

CHAPTER VIII.

Two years had passed since the breaking up of George Campbell's home. His trouble was not less, but he had grown accustomed to it. Walter was the constant companion of his leisure hours. Patient and faithful to his trust, he cared tenderly for the child, who was happy and contented. The father longed for his other boy. He wanted his children together. Will was now thirteen years old, and he could help care for his younger brother. Mr. Campbell decided to have a home for his children. The venture might not prove successful, but he would try. They would be together, and perhaps mother would come by and by. Will fell in with his father's plan with delight. It would be a pleasure to take care of the little brother, from whom he had been parted so long. Mr. Campbell rented a pleasant cottage, and moved his household goods into it.

Aunt Mary, with whom Will had been staying, went with him to his new home to help get things in running order. She would

stay a few weeks, and in the meantime, a housekeeper could be secured. It was smooth sailing with Aunt Mary at the helm, and they were soon nicely settled.

Mr. Campbell decided to go with his boys, to visit their mother, hoping it might do her good to see them. "Surely, if it is possible, she will, for their sakes, try, hard to get well," he thought, as he looked, with a father's pride, at his boys, on the morning of the journey.

He tried to prepare Will to find a great change in his mother. "Remember, my boy that your mother is very sick, mentally, and she may not know us," he said; "but when she gets well, her mind will be restored to her." "I think," said Will, "we can make her know us. When she sees us all together she will be so glad. We will tell her about the new house, and how much we all love and miss her."

His father smiled and did not discourage him; although he remembered with sorrow, his last visit to his wife. Unfortunately, the present visit, occurred soon after Ruth's sad experience with the girl, Jennie.

In the ward to which she had been removed the patients, although not violent, were often noisy and troublesome.

"Mrs. Campbell has company."

Ruth gave no outward sign that she heard the words; but her heart beat violently.

Would it be the ones she most wished to see?

The attendant who smoothed Ruth's hair and made her dress tidy to receive her friends saw only a passive, quiet woman who did not seem to think of or care for any one. So little do we know of one another. Ruth was led into the reception room, and she heard the welcome, familiar voice. The spell that had bound her was, for the time, broken, as she returned his affectionate greeting, but there was a look of disappointment on her face as she glanced around the room. "Oh, George!" she cried, "Where are my children?"

"They are here, and you shall see them," her husband replied.

Just then the doctor, who had been listening outside, entered with the boys. Will's face showed plainly the surprise and the pain that he felt. His mother was changed so much that he would hardly have recognized her. Her hair was cut short, and she was thin and pale. He put his arms around her neck, and kissed her, while Walter greeted her by handing her a

pretty, embroidered handkerchief, saying, "Here is something I brought you."

Ruth thanked him with a kiss, but when she asked him to sit with her, he refused.

"Sit with your mother, and I will give you ten cents," said the doctor.

"Give it to me first," answered the child shrewdly.

His father lifted him into her lap, but he was not willing to stay.

"Never mind, dear," said her husband, seeing her look of distress, "Walter does not quite remember you."

Ruth had many times pictured to herself a meeting with her husband and children, and now they were here. She wished that they would talk to her more, and tell her all that had happened. She wished the doctor would go away, and let her have her dear ones, all to herself. She tried to talk with Will, but something seemed to come between them.

So in all lives. We look forward, weeks, months, and years, to meetings that may or may not be. We rehearse over and over again, what we shall do, and the words that we shall say. The day comes and goes, and the words remain unspoken.

Ruth looked with tender pity, upon her boy's sorrowful face. She wished to know if his life was unhappy; but she could not ask him.

"Do you go to school, Will?"

"Some of the time I do. I have been reciting to Aunt Mary lately."

Ruth thought that strange, and wondered why he did not go to school all the time. She noticed with satisfaction that they were all well dressed. Will tried to be very brave, for the doctor had told him that his mother had been violent lately, and that he must be very careful what he said. With this restraint upon him, the story of the new home, remained untold, and the words of love his heart dictated, found feeble utterance.

"You must try hard to get well, mother, and then you can come home," he managed to say.

"I want to go home with you now. Oh, George, take me home, and let me live with you and the children! Don't go and leave me here!" she pleaded.

"I wish I could take you, Ruth," answered her husband; "but the doctor thinks you are not well enough to go yet. Be

patient; dear, and I will certainly come for you when you are able to go."

The doctor motioned to Mr. Campbell that he had better go. Ruth tried to hold them.

"Don't go, don't leave me! don't take away my children!" she cried.

Will clasped his arms around his mother's neck and kissed her without speaking, and Ruth saw the tears roll slowly down his cheeks.

They left her, and she was led to her room, mourning for her husband and children.

Left alone, without a word of encouragement or comfort, what wonder that she grew wild and desperate.

In a hospital containing hundreds of patients, and with but few doctors and nurses to care for them all, there is little time to devote to individual cases. They must be cared for as a whole.

While Ruth's husband and children were with her, the delusions which had tormented her were forgotten to a great extent. She had watched their every word and look, trying to read their thoughts. They had gone, and she did not know where. She had not even asked them where they lived. It seemed strange that they did not tell her. Her husband had looked sorrowful and careworn; Will's face, with the tears upon it, she could plainly see; and Walter had forgotten her. How her heart ached! She asked herself: "Where will this end?" The answer seemed to come, "In the grave."

The next moment, she was wildly beating her head with her hands. Not satisfied with that, she snatched her slipper from her foot, and pounding her temples and forehead with all the strength she had, until, hearing footsteps, she cunningly replaced her slipper, and waited another opportunity which soon came.

Her bruised face did not attract attention until the next morning, when it was so badly swollen that she could not open her eyes.

The doctor was called, and he said, "She has erysipelas, and must remain in bed. Bathe her face frequently in camphorated ether, and be very careful that you do not get it into her eyes." His directions were carefully obeyed through the day; but when the night watch bathed Ruth's face, she carelessly allowed the liquid to run into her eyes, causing her great distress; but she

made no complaint. To the majority of people, life seems to hang by a very brittle thread. Our papers are filled with casualties. Railway accidents, shipwrecks, famine, pestilence, and war carry away thousands upon thousands; we see death all around us, until we wonder how and why we are spared; but let the day come, as it does come to many, when life is no longer the pleasant thing it was, when the sun shines not for us, when our work falls idly from our hands, and we deem our prayers unanswered, when we long for death and it comes not, then it is that we see how strong a thing is human life.

Ruth, learning by experience, that she would not be allowed to die of starvation, conceived the idea of ending her life by over-eating. How was she to get the food? There was but one way, and that was to ask for it. She thought the matter over a long time before she found courage to speak. One day when the doctor was about to feed her, she managed to say, faintly, "Give me something to eat."

"Well! well! What will happen next?" said the doctor with a laugh. "I don't think we can give you a warm breakfast, with tea or coffee just now; but we will do the best we can."

The doctor did not understand Ruth. She was hungry for death. Food was given her, and she ate it. At noon time she was given an abundant dinner, which she swallowed eagerly; as she did every meal for three weeks. Sometimes the patients gave her food, thinking she did not have enough. She ate all she could get, not caring what it was or how it tasted.

One day she found two sharp bones in some fish that she was eating, and she swallowed them both. They came near choking her, and caused her great distress, but the injury was not lasting. There came a day when Ruth was really sick. The doctor gave orders that she have less food and only that given by the attendants. She refused to drink the medicine that he sent for her, and resolved that she would never again, voluntarily, partake of food.

When the doctors found that she persisted in refusing to eat, they decided not to feed her for awhile, thinking that hunger might force her to eat. At one time she had been allowed to go without food four or five days, and she had not yielded; but this time, she had been eating with such evident relish, that they hoped to conquer her. Three times a day, food was placed before her with nice hot tea or coffee, but it did not tempt her.

She was closely watched, the doctor feeling her pulse often to see if she were growing weak. She tried her best to deceive him. When she was led to her room at night, she strained every nerve to show that she was strong, although her limbs shook beneath her weight. She suffered; but she did not mind it. She counted the days, anxiously hoping that she might get sick and die. One of the doctors told in her hearing the story of Dr. Tanner's fasting. She did not believe that any one could live forty days without food, and she thought that they were trying to frighten her.

The days came and went until Ruth had counted eleven. Not one drop of water had passed her lips during the time. On the evening of the eleventh day, although very weak, she managed to walk to her room; but she lost her balance and fell to the floor, when the attendant lifted her foot to remove her slipper. The girl helped her to rise and she was soon in bed. In the morning she was dizzy and faint. Her arms were closely confined in a camisole and she had to stand while it was taken off. Having no support, she again fell to the floor. She was lifted into bed; and the doctor was summoned. He watched her a few moments, then went away without a word. "Perhaps," thought Ruth, "he sees how useless my life is, and has decided to let me die."

He soon returned, and with him, Dr. Hale, the Superintendent. Ruth did not open her eyes, but she listened intently. She heard them set a pitcher upon the table, and she knew what would take place.

"We will try the feeding cup first, and if she knows what is best for herself, she will drink her food from it," said Dr. Hale. Drinking from a feeding cup, when one is willing, is not unpleasant; but imagine your nose held so tightly, that you cannot breathe without opening your mouth, your tongue held down, and the sharp edge of the cup cutting the roof of your mouth, and you will not care to try the experiment.

Dr. Hale was determined to conquer Ruth, if possible.

"If we commence feeding her again," he said, "it will not be once or twice only, it may be for years, judging from past experience."

Ruth struggled until her face was purple, and her mouth bleeding.

"Well," said the doctor, setting down the cup, "there are

more ways than one, and perhaps she will be willing to drink her food, another time."

Ruth did not have long to wonder what new torture was in store for her. They seemed to be running something through her nose into her throat. She soon understood what it was for. They were forcing food through a nasal tube into her stomach. It was a painful operation, but she was so frightened that she did not cry out or move. For three days, she was fed in this manner, and then the feeding cup was tried again without success.

After that the stomach tube was used in feeding her, and she was left quietly to herself. There did not seem to be anything the doctors could do for her, but to see that she was made comfortable. To their minds, she was growing demented. The faint hope that had come to her, when her husband and children visited her, had died out and had left her more gloomy than before.

Day after day, she sat there, walking only where she was led. Thinking, always thinking, with never a hope for the future, her thoughts were always of the present and the past. It would have puzzled the doctors to have found a reason for the strange hallucinations that filled her brain. Sometimes she sat all day, with her face buried in her hands, which rested upon her lap.

When evening came, and she had to rise to be undressed, her limbs would be so numb, that she could not stand, without support. Most of the patients were very kind to Ruth. The pity, which causes us to be gentle with the helpless, remained with these unfortunate ones.

Hannah, was an exception to this rule. She was a great worker, although crazy; and, being always busy herself, it may be that she felt indignant toward Ruth, who was always idle. She certainly seemed to have a spite against her, and lost no opportunity for showing it, by striking and pinching her when she was not likely to be noticed.

One day, when Ruth was sitting with her face buried in her hands, Hannah struck her upon the back of her head, with the iron part of a mop which she had been using, and then ran away. Ruth could feel the blood running over her hand, and soon the attendant noticed it, and called the doctor, who said that a small blood vessel had been broken.

Hannah was suspected, and charged with the deed, which

charge she did not deny. The doctor thought best to separate them, and, as Ruth was not violent, he ordered her return to the sick ward.

Ruth felt almost sorry to leave the ward where she had been staying. The patients were wild, and raving over their troubles, but she had sympathy for them, and it may have helped her to think a little less of her own sorrows, to feel that she did not bear, quite alone, the sorrows of the world.

Miss Brown, the attendant, had been very kind. She had a plain face, her voice was loud, and her laugh could be heard over the hall; but she was gentle with the patients, and thoughtful for their comfort. When they meet "on the other side;" Ruth will look to see Miss Brown's shining feet, in memory of the song, "Those golden slippers I'm going to wear," which she had so often heard her sing, as well as in memory of her kindly deeds.

(To be continued)

Editorial

Some doors had been unhinged and laid lengthwise on trestles, forming a table about which the operators stood in a little group. Most of them were in their shirt-sleeves, and they were all perfectly composed. A few were smoking. While I sat surveying the scene, a man was brought in bloody and screaming. In a moment he lay stripped. A jagged fragment of a shell had torn a furrow across his breast. I could see his lungs clipped and exposed. No need of probing. The chief gave the wound one look, and followed it with a silent wave of the hand; whereupon the under-assistants lifted the doomed subject and bore him away to die slowly, and in agony. As I turned to escape the spectacle—from the piercing cries there was no escape—it came to me what some may think a horrible thought: Why should not a surgeon, seeing death inevitable, be required to speed the end?

An Autobiography.

LEW WALLACE.



The Injection Therapy of Neuralgia.

Practically all of the methods of treatment advised for neuralgia have one feature in common and that is that they are practically always symptomatic, and probably will remain so as long as we know no more than we do at this time of the true nature of neuralgia. Schleich deserves credit for having opened the way

for the treatment of painful disturbances of the nerves by the injection of large quantities of fluid in the vicinity of the disturbed nerves. A number of years passed after he proposed this method of treatment before it received any general adoption. At first cocaine in some form or other was used and the benefit derived was believed to be due to the drug employed. Further observation, however, led to the conclusion that the result was rather due to a mechanical than to any pharmacological effect. As a result of this the use of drugs in these injections became less and less frequent, and normal salt solution replaced them.

In the *Deutsche medizinische Wochenschrift* (No. 6, 1898), Dr. Erich Schlesinger states that he has been struck by the anesthetic properties of cold solutions, either in the nature of cold applications or ethylchloride or ether spray and has employed cold salt solution in injections in the treatment of neuralgia. He at first expected that the injection of cold fluids would give rise to pain, but experience has shown that it does not. Furthermore, cold solution does not appear to influence the vitality of the nerves or tissues, for it is quite possible to freeze the vagus nerve of a rabbit without in any way interfering with its function. He makes use of salt solution at zero temperature centigrade which he secures by immersing the salt solution in finely-chopped ice mixed with salt and ammonia.

The technique of the injection consists in the introduction of a small quantity of the solution beneath the skin and in the case of the sciatic nerve the use of a needle eight centimetres long which is inserted just below the gluteal fold in the immediate vicinity of the sciatic nerve. He does not believe it is possible, except in occasional instances, to secure intraneural injection, nor does he regard that as necessary; in fact, he seems to think that direct injection of the nerve might be harmful in that it might lead to degeneration of certain of the motor elements. The introduction of the cold fluid in the immediate vicinity of the nerve is followed by immediate cessation of the pain and this has a very important psychic effect upon the individual, which, as everyone knows who has had any experience, is of the greatest importance in the treatment of neuralgias.

He emphasizes the fact that all forms of stretching of the sciatic nerve have been practically of no avail in the treatment

of sciatica. There is very frequently more or less spasm of the muscles surrounding the nerve, which gives rise to a variety of contractures. These contractures are very largely relieved by the injections, with the result that whatever mechanical insults to the nerve may have arisen from these contractures are entirely eliminated. He reports forty-two cases of sciatica, many of which were cured by a single injection. In about sixty per cent., however, of the cases, repeated injections were necessary. The writer in the cases in which he made use of his treatment was specially struck by the coexistence of gouty attacks with the sciatica. In fully seventy per cent. of his cases such an association was demonstrated, which he believes is an indication for the observance of a very strict dietetic regime in cases of sciatica. He has also made use of the same method in the treatment of other types of neuralgia, intercostal, trigeminal, etc. He has also had success in the treatment of the girdle sensation, as well as the gastric crisis in cases of tabes.

Little' Biographies and the Eponymic Diseases

XXVIII. RICHARD BRIGHT.

RICHARD BRIGHT was born in Bristol, England September 28, 1789. In 1808 he matriculated at the University of Edinburgh in the department of arts and in the following year entered the medical department. In the summer of 1810 he spent several months in Iceland. On his return he studied in London living for two years in the house of one of the resident officers of Guy's Hospital. Here he attended medical lectures and studied anatomy and surgery under Ashley Cooper, the two Clines and Travers. In 1812, he returned to Edinburgh and on September 13th of the same year received his medical degree. At that time he intended to graduate also at Cambridge but after spending two terms returned to London where he became a pupil at the public dispensary. In 1814 he made a tour through Holland and Belgium and in Berlin spent some months at the various hospitals. From Berlin he went to Vienna where he studied during the winter of 1814-1815. At that time the old Vienna school of medicine was at its height

and Hildenbrand was chief professor of medicine. The following Spring he extended his journey to Hungary but returned in the summer arriving at Brussels about two weeks after the battle of Waterloo. Here the immense military hospital supplied material of professional interest which delayed his homeward journey. On December 23, 1816, Bright was admitted a Licentiate of the College of Physicians. Soon after he was made assistant physician to the London Fever Hospital, also the Public Dispensary. He spent the greater part of the year 1818 traveling through Germany, Italy and France. In 1820 he settled down in London, and in the same year was elected assistant physician to Guy's Hospital. During this year he commenced that course of clinical study and indefatigable industry as a teacher which made his own reputation and contributed much to raise that of the school in which he worked. In 1824 he was made full physician and occupied this post till 1843 when, on resigning he was made consulting physician. In 1827 he published the first volume of a collection of "Reports of Medical Cases" which contained the first account of his researches on dropsy. Shortly before Bright's time, Blackall and Wells noticed that dropsy was frequently associated with albumin in the urine. Bright by performing many postmortem examinations found in all such cases a peculiar condition of the kidneys present, thus proving that the symptoms spoken of were really those of a disease of the kidney. The importance of Bright's discovery is shown by the fact that no one before had suspected the kidney to be the organ implicated. Next to the discoveries of Laennec in chest diseases that of Bright's is perhaps the most important made in medicine in the first half of the 19th century. In 1832 he was made a fellow of the College of Physicians at that time a rare distinction. He was Gulstonian lecturer in 1833 and Lumleian lecturer in 1837. He was a fellow of the Royal Society and received the Monthyoun medal from the Institute of France. On the accession of Queen Victoria he was appointed physician extraordinary to her majesty.

Bright was a man of fine and attractive nature, uniformly cheerful and of an affectionate disposition. He was widely accomplished, a good linguist, well versed in more than one science, a creditable amateur artist, and well cultivated on all sides by travel and society. As a physician apart from his hospital work his success was steady, if not rapid. In the early part of his career his practice was not very large but as his reputation rose

he took the leading position as consulting physician in London. As a teacher he was not regarded as a brilliant man, having little power of interpretation. In his own school while his fame spread, he was less popular and impressive than his brilliant colleague, Thomas Addison, though the latter was less known. As a student and clinician he displayed remarkable energy and industry. Realizing the importance of morbid anatomy in the study of medicine, for some years he spent six hours every day in the wards or postmortem room, as well as lecturing in the medical school. He succeeded in reviewing objects without prejudice presenting no theories, and was unbiased by the prevailing system of medicine. Bright was not only an acute observer but he also possessed the much rarer faculty of synthesis, which makes an observer, a discoverer.

C. W. LOUIS HACKER.

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A special meeting of the Medical Society of the County of Albany was held Monday evening, March 9, 1908. Meeting called to order at 8:45 p. m., President Lempe in the chair.

The following members were present: Drs. Bartlett, Bedell, A. J. Beilby, Bristol, Classen, Conway, Douglas, Gutmann, Hacker, Holding, Jenkins, Keens, Kreiger, Lanahan, Lawyer, Lempe, Lomax, McKenna, MacFarlane, Mereness, Meyers, Murray, Neuman, G. W. Papen, Jr., Pease, Reynolds, Root, Rulison, Sampson, Shaw, Stillman, Traver, A. Vander Veer, E. A. Vander Veer, J. N. Vander Veer, Ward, Washburn, Winne.

Dr. W. O. STILLMAN, Chairman of the Pavilion "F" Committee, read the report of that committee, as follows:

REPORT OF COMMITTEE ON PAVILION F.

Appointed by the Medical Society of the County of Albany to confer with the Board of Governors of the Albany Hospital with reference to certain conditions connected with the management of Pavilion F, concerning which complaint had been made to the Society by members.

To the President and Members of the Medical Society of the County of Albany:

As Chairman of the Committee appointed by this Society on May 8, 1907, to consider matters relating to "Pavilion F," I have the honor to make the following report:

The full Committee met several times and deeming it wise to ascertain the sentiment of the profession in regard to the management of "Pavilion F" divided the work of communicating with the physicians of this city among the members of the Committee. Most physicians in active practice in the city were consulted with. The circumstances connected with the erection of "Pavilion F" by the County of Albany were carefully examined as well as the agreement entered into by the Board of Governors of the hospital on assuming control of the Pavilion. It was found that while several physicians, having little to do with this department of the hospital, were indifferent in regard to conditions, and a very small number appeared satisfied, because they were permitted to see their patients and collect fees therefor although not permitted to be active in the management of their cases, that apparently the majority of the profession were dissatisfied with existing conditions. A considerable number of physicians had had unpleasant experiences and several of these absolutely refused to have patients sent to "Pavilion F." Some physicians carried their feeling so far as to refuse to have patients sent to the hospital.

On January 12, 1908, the Board of Governors of the Albany Hospital very courteously gave your Committee a hearing concerning this matter. The following statement was presented at that hearing:

A, STATEMENT.

In regard to the relations of the medical profession of the County of Albany to "Pavilion F" of the Albany Hospital, presented to the Board of Governors of the Hospital on Sunday, January 12, 1908, by the Committee of the Medical Society of the County of Albany, Appointed at the Annual Meeting of the Society held May 8, 1907, to confer with the Board of Governors in relation thereto.

To the Board of Governors of the Albany Hospital:

SIRS.—At the annual meeting of the Medical Society of the County of Albany, held in Albany, N. Y., May 8, 1907, the following letter was officially presented by the President:

"ALBANY, N. Y., May 5, 1907.

"Dr. George G. Lempe, President Albany County Medical Society:

"MY DEAR SIR.—Will you kindly let me know what you or the members of the Albany County Medical Society think about the way affairs are conducted at 'Pavilion F'?"

"I recently had a private patient in a room at the Albany Hospital. On one of my visits I was informed that she had been transferred to 'Pavilion F' and that I would not be permitted to treat her there. Why I should be deposed in such a manner against the wishes of herself and family is something I cannot understand. Is there not some way to be devised so that the members of the Albany Medical Society can treat their patients in 'Pavilion F' the same as in other departments of the Albany Hospital?"

"If you will kindly enlighten me, and bring the matter before the Society, you will greatly oblige.

"Yours fraternally,

(Signed) "WILLIAM SAMUEL BRISTOL, M. D.,
"80 South Ferry Street."

Dr. WILLIAM O. STILLMAN, in opening the discussion on the letter at the meeting, referred to a similar unpleasant experience in his own practice where a patient coming from out of the city for his special care, suffering from a very mild form of hysteria, on committing the offence of stumbling over a chair in the night while going to or from the lavatory, was peremptorily ordered to "Pavilion F" by the Superintendent of the Hospital, but with the positive assurance to Dr. Stillman that he should attend his case personally pending a change of rooms. In spite of this official assurance his medicines were thrown away; his patient was appropriated by the specialist in charge in spite of her objections; practically no medical treatment was given her although it was needed; she was rendered worse by coming within the influence of the insane confined in the pavilion, and the doctor was finally obliged to remove his patient from the hospital in order to regain control of the case.

In the discussion which followed it developed that many other physicians were reported to have had somewhat similar experiences, and felt that they "were not fairly treated" at the hospital. The discussion was participated in by Drs. F. L. Classen, D. H. Cook, H. E. Mereness, J. H. Gutmann and others. On the motion of Dr. Stillman, seconded by Dr. Classen, the President of the Society was authorized to appoint a committee to confer with the Board of Governors of the Hospital in regard to the matter. The President appointed the following committee: Dr. W. O. Stillman, Dr. A. MacFarlane, Dr. W. S. Bristol, Dr. F. L. Classen, Dr. H. E. Mereness, Dr. A. J. Blessing.

This Committee has held several meetings and has very carefully considered the various complaints and statements made by physicians, and also the conditions involved. The work of personally communicating with nearly every active member of the profession in the city of Albany was divided between the members of the Committee, and the general drift of sentiment ascertained. The correspondence of physicians with the Board of Supervisors which led the County of Albany to build "Pavilion F," the resolutions of that body in relation thereto, and the subsequent agreement of the hospital management with the Board of Supervisors on assuming control of "Pavilion F" were carefully examined by the Committee.

As a result of the foregoing investigations this Committee respectfully begs to submit the following statements to the Board of Governors:

First. That there appears to be a feeling prevailing among a very large proportion of the physicians of this section that the treatment of the profession in its relations to "Pavilion F" is largely unfair and unjust, in that it deprives the doctors of the personal charge of their patients, when not county charges, and when able and willing to pay the hospital for private accommodation; also, in that their patients are taken away

from them against the wishes of both the parents and their families, not only when suffering from mental troubles but also when affected with other than insane conditions, and when they would ordinarily be allowed to attend them in a general hospital of the type of the Albany Hospital. In the opinion of this Committee there are not sufficient reasons for this arbitrary practice which has caused much unpleasant feeling, both in the profession and among the laity.

Second. That while "Pavilion F" has cost the taxpayers of the County of Albany \$36,800 for construction and furnishing, and large sums yearly for maintenance since 1902, on the ground, as originally stated by the petitioning physicians who asked for it, that it should be built "for the temporary care of insane patients," that a large variety of other medical cases are being treated there; and further that this section of the hospital, built at public expense, *aside from the care given county cases*, is maintained practically as a private sanitarium for the attending specialist who alone can treat cases there. It would appear that, except for county cases, it is used only for private patients compulsorily under his personal charge. In the opinion of this Committee it is unjust and unnecessary.

Third. That this exclusive privilege discriminates against all other physicians, however specially competent or trained for this class of work, by preventing them from attending cases in this county needful of restraint, however earnestly their services may be desired, or however well fitted for this work they may be. If the Governor of this State were seized with mental derangement, requiring temporary restraint in this county, he could not be attended in "Pavilion F" (our only resource for such cases) under the present rule of your Board, by the most eminent specialists in the country summoned expressly for his care. What would apply to the Governor applies with equal force to any other public or private citizen. In the opinion of this Committee this is also unjust and unwise.

Fourth. That it appears it has been a practice to hold lucrative chronic cases in confinement in "Pavilion F" for relatively long periods of time (in some cases for years we are told), contrary to the law of the State of New York, which declares (see Article 2, Section 47 of the Insanity Law) that "No person, association or corporation shall establish or keep an institution for the care, custody or treatment of the insane, for compensation or hire, without first obtaining a license therefor from the commission." This law also provides that all such institutions must be in charge of a "*resident physician*," who has had at least five years actual service as a physician in an institution for the care and treatment of the insane, and that such institutions must also be subject to the official inspection of the State at least twice in each calendar year. It does not appear that "Pavilion F," although clearly coming within the provisions of this law, conforms to these requirements in any respect. This defiance of law makes possible serious abuses, and overcrowds the already crowded "Pavilion," so that it may be claimed that there is no room for other private patients under the care of their

own physicians. In the opinion of this Committee this practice is clearly wrong and indefensible.

This Committee further begs leave to submit the following conclusions:

First. That while it does not in the least question the obvious propriety of having a nervous specialist in charge of "Pavilion F" it believes that certain private rooms, designed solely for private patients, might be safely designated for their use while under the care of their own medical attendants, if not necessary for county cases. We believe that this would be a great boon and a much longed for relief on the part of physicians and patients, and respectfully petition your honorable Board to grant such a rule. Under present conditions very many patients are deprived of the privileges of "Pavilion F," although needing them as much as many who are confined there, because families are unwilling to give up their personal choice of a physician.

Second. We believe that the attending specialist should have exclusive charge of all public or county cases, and all who have been adjudged legally insane; we suggest that the Superintendent of the Hospital should have the right to peremptorily reject all private applicants for admission, within his discretion, *and that the attending specialist should see all cases on or soon after admission*; we suggest that the Board of Governors should establish stringent regulations with regard to the admission and management of private cases and reserve the right to expel, through the Superintendent, all those who wantonly violate the rules. *We also believe that this Board should define the limit of time during which cases may be held in "Pavilion F" in view of the State law and a sound public policy.* We think no one would question the propriety of using the Pavilion for the "temporary care of the insane" as originally suggested.

Third. We believe that the allegation that it is not safe to admit physicians in good standing to the privacy of this so-called "Reception Pavilion" is unfounded in fact, and that it is fully as safe and prudent as it is to admit them and their patients into private rooms in other parts of the hospital. The same principles are involved in both cases. The same observation also applies to methods of management and treatment. We have been able to learn of only three reasons advanced in opposition to physicians attending patients in this Pavilion. (A) That it is not safe or prudent lest they should discuss persons or conditions seen there on the outside. We submit that the physicians of this county are quite as much to be trusted as the numerous visitors who see friends in the Pavilion, or the crowds of students and pupil nurses who go there. (B) It is said that private attendance has been tried there and has proved unsatisfactory. We would say that proper rules and regulations, with a wide discretion given the Superintendent to exclude or expel, would really meet this difficulty. The same argument was used against private attendance in the main hospital and has been proved unfounded. (C) It has been said that the Pavilion has been too crowded to admit private cases. In reply we would say that many of the cases there are private cases which could be best attended by their own phy-

sicians and that we believe that all chronic cases should be excluded. With this rearrangement we believe that this objection would be fully met.

Fourth. We believe that physicians in good standing should, subject to the approval of the Superintendent, have the privilege of personally attending their cases of mental and nervous trouble, including drug addiction, alcoholism, hysteria, delirium, etc., in some suitable portion of the hospital, if the present liberal and enlightened policy of your honorable Board in allowing private charge of medical and surgical cases is to be continued. It would certainly seem appropriate that that part of the hospital, paid for by public money for cases of this kind, and now used, after county cases have been cared for, by the attending specialist for his private patients to the exclusion of all other physicians, should also be used by other physicians for their private cases, thereby increasing the income of the hospital and affording a most acceptable and grateful relief for the public. We respectfully, but earnestly, petition this Board for this relief in the name of the great mass of reputable physicians of this county.

In conclusion we wish to say that there is no question of personal animosity on our part, or on the part of those whom we represent, toward the attending specialist in charge of "Pavilion F." We have criticised conditions, not persons. We ask a change of rule in the interest of the larger public good which will result, and because, after careful investigation and consultation, we believe the objections to the change to be invalid.

We also recognize the high and splendid character of your Board and realize that its only object is that the best public interests should be served, and that if this relief be granted it will be as a concession by your Board in view of the great public demand which has been made. We only venture to trouble you because of the large importance of this question to many people. Thanking you for the courtesy and consideration of this hearing, we are,

Very respectfully yours,

W. O. STILLMAN,
A. MACFARLANE,
W. S. BRISTOL,
F. L. CLASSEN,
H. E. MERENESS,
A. J. BLESSING,

Committee.

Following the presentation of the statement a number of questions were asked and some general discussion ensued which we will not attempt to reproduce in this report. The meeting adjourned with the understanding that Dr. Mosher was to be requested to present his side of the subject. Previous to the next meeting of the Board of Governors, the Chairman of your Committee sent a copy of "the statement" to, I believe, every member of the Board of Governors with a personal letter to each which is presented herewith as summarizing objections which

were made at the hearing in opposition to any change in the existing plan of management at "Pavilion F." The following is a copy of the letter:

(Copy.)

January 28, 1908.

My Dear Sir:

I enclose herewith a copy of the statement presented to the Board of Governors of the Albany Hospital by the Committee of the Albany County Medical Society with reference to Pavilion F, thinking that you may be interested to look over with some care and in detail the statements made, prior to the next meeting of your Board.

At the hearing before the Board of Governors only two points in opposition to the suggestions of this Committee were made as far I can recall. They were:

First. That the work of supervising all inmates of Pavilion F might require a specialist;

Second. That a divided authority would lessen responsibility and cause confusion and disorder.

In regard to the first point, that a specialist should have exclusive charge of all cases committed to Pavilion F I beg leave to call your attention to two facts. These are:

(A) That a very large proportion of all cases received in Pavilion F are not cases of insanity but cases of hysteria, delirium connected with sickness or injury, alcoholism, drug addiction, and oftentimes mild cases of nervous disturbance. Such cases, you will readily recall, are usually attended in their own homes by physicians and also in nearly all hospitals of the type of the City Hospital. It surely does not need a specialist to care for these cases, especially when the insistence upon this view does violence to the wishes of the patient, family and physician, and amounts to a forcible confiscation through temporary power.

(B) It is also fair to call attention to the fact that in insanity only about one case in ten is violent or unamenable to ordinary care and that all such cases are usually in charge of the family physician previous to coming to the hospital. It should also be borne in mind that there is no special magic in the oversight of a specialist in insanity as the treatment is almost wholly non-medicinal, reliance being placed upon restraint, cheerful surroundings, and attention to the general health. It surely does not require a specialist to carry out these general principles of masterly inactivity as regards medical treatment. As we venture to indicate, all cases that are sent by the County, which would embrace many of the lowest and worst cases, would naturally come under the charge of the specialist; so also should all cases which have been declared insane and are held pending commitment to an institution for the insane. Are not these points worthy of thought and careful consideration? It is quite possible that the members of the profession do not look with the same awe upon a specialist in insanity as the laity, as his limitations and powers are much more nearly appreciated and understood.

In regard to the second point, that it would lessen responsibility and cause confusion in management, I beg leave to say that probably not

twenty-five per cent. of the cases in Pavilion F would at any time be under the control of their private physicians, should that practice be permitted, and I further wish to say that I cannot see wherein there would be a special difference in the management and control of Pavilion F and Pavilion A. Both would be subject to the general rules of the hospital and any disturbance or annoyances will be summarily suppressed by the Superintendents in charge. Statements to the effect that this division of so-called responsibility would produce dire results is purely a fog manufactured to becloud a situation which is as plain and simple as in any other portion of the hospital.

I thank you for the trouble which you have taken in reading this letter and trust that you will consider the largest good of the largest number by taking the progressive step that physicians may attend their own cases in all instances in Pavilion F the same as elsewhere in the hospital. It surely must come to this in time and it hardly seems fair that the opposition of a very small number of physicians should outweigh the natural, just and proper feelings of the great mass of the medical profession and of the public involved. Large numbers of cases are withheld from the advantages of Pavilion F because of existing conditions which are considered unfair and obnoxious thereby depriving the hospital of a very considerable source of revenue and depriving the public of a resource which would be most acceptable.

With kind regards, believe me,

Faithfully yours,

(Signed) W. O. STILLMAN,
Chairman, etc.

Under date of February 10, the following letter was received from the Secretary of the Board of Governors of the Hospital as presenting the decision of the Board respecting matters discussed:

(Copy.)

February 10, 1908.

Dr. W. O. Stillman, Chairman, Committee of the Albany County Medical Society, Albany, N. Y.:

DEAR SIR.—At a meeting of the Governors of the Albany Hospital, held the 10th inst., the following action was taken relative to the question of the management of Pavilion F which had been brought to the attention of the Board by your committee:

Resolved, That the Board of Governors after careful consideration have concluded that it is not wise to change the existing rules governing Pavilion F and that the Governors would repeat the statement, already published, that the co-operation of the attending physician with the doctor in charge of Pavilion F is not only permitted, but desired.

Respectfully yours,
(Signed) FREDERICK TILLINGHAST,
Secretary.

Your Committee is unable to see that the resolution from the Board of Governors alters in the slightest degree the previously existing status

of this question. In the past physicians have been theoretically welcome to see their cases in Pavilion F but practically their presence was apparently not especially desired, while their wishes in regard to medical treatment received little or no consideration.

On February 22 the Chairman of your Committee received through the courtesy of Mr. J. Townsend Lansing, President of the Board of Governors, Dr. Mosher's reply to the statement of your Committee which is as follows:

(Copy.)

DR. J. MONTGOMERY MOSHER,
170 Washington Avenue,
Albany, N. Y.

February 4, 1908.

Dr. G. Michaelis, Secretary Board of Governors, Albany Hospital, City:

DEAR SIR.—I have the honor to acknowledge the receipt of your favor of January 14th, ult., enclosing "a statement in regard to the relations of the medical profession of the County of Albany to Pavilion F," etc., by a committee of six physicians, together with a dissenting statement from Dr. Mereness, one of these physicians, and a request from the Board of Governors that I "forward any statement in answer thereto."

In response I would say that this statement is an arraignment of the scheme of administration of Pavilion F as determined by your Board, with suggestions for changes in the plan. From this Dr. Mereness, a member of the Committee, dissents, and he expresses approval of the present arrangement. In so far as the "Statement" is general and looks to the substitution of other rules than those adopted by your Board and now operative, it is hardly proper for me to offer an opinion. It would seem necessary that specific facts of error should be submitted in support of any demand for change in methods. These specific complaints, as alleged in the "Statement" appear to be three in number.

1st. That physicians are not allowed to treat their own patients in Pavilion F, two cases being cited, those of Dr. Stillman and Dr. Bristol.

2nd. That patients are held in Pavilion F in violation of the law, and,

3rd. That the Pavilion is overcrowded. "So that it may be claimed that there is no room for other private patients under the care of their own physicians."

First. With reference to Dr. Stillman's patient, an incident of two years ago. Dr. Stillman's case was considered by your Board, and on March 5, 1906, Mr. Knowles, as Vice-President, wrote Dr. Stillman as follows:

"The Executive Committee at its last meeting gave very careful and thoughtful consideration to your letter in all of its detail, specially noting the exceptions taken to your being unable to take entire control of your patient while in Pavilion F, as you had previously done while she was in the Hospital proper. I think upon careful consideration you will see the propriety, and justice, too, of the rules governing the treatment of cases in Pavilion F as against that of other Departments of the Hospital.

At the time the Board of Governors assumed the responsibility of the care and service of Pavilion F, rules and regulations governing the treatment in this Department were considered with great care and deliberation with the assistance and advice of the medical faculty especially conversant with the treatment of patients for which this Pavilion was to be used. It was thought wise at the time, and we think subsequent experience has confirmed the wisdom of the course taken, that this Department should be under the care of a specialist in the line of practice for which Pavilion F was erected and turned over to the Hospital. Fortunately for the Board of Governors and the City of Albany, such a recognized authority was found in one of our own citizens, Dr. Mosher, a man of acknowledged ability in his special line, not only in Albany but throughout the entire State. In order that no practitioner, or his patient, might feel aggrieved or interdicted from the use of this Pavilion, the wise and generous rules adopted provided that in the event of mental or physical weakness making the transfer to Pavilion F desirable, the attending physician was to be allowed to follow the patient into the Pavilion for co-operation with Dr. Mosher in the treatment of the original cause or disease, and if I mistake not, this is the first time objection has been made on the part of any practitioner to this rule. Writing as a layman, it is proper I should state the rules governing Pavilion F were prepared by the medical members of the Board after a careful consideration and digestion, and at our last Executive Meeting, it was unanimously voted in the opinion of the Board that it was not wise, or expedient, from any view-point to change the existing rules and regulations governing Pavilion F. I sincerely hope that your own judgment upon further reflection will be in accord with this decision."

With reference to Dr. Bristol's case, the records show that this patient was admitted to Pavilion B in the service of Dr. Ward on March 17, 1906, and that treatment was ordered by Dr. Krieger and Dr. Rooney, and Dr. Bristol's name does not appear on the record. On March 21, at 6.00 p. m. she was "difficult to manage, trying to get out of bed," and was transferred to F. I saw her the next morning with Dr. Bristol, who appeared on the Ward as her physician. I explained to him that she would be in my care, but as the case was critical it was important that he should keep in touch with it and asked him to visit her regularly at his pleasure. He gave the history of the case, which I wrote, suggested a line of treatment, which was adopted, and called several times, on one occasion requesting that we exclude her friends who were visiting too frequently for her good. This was done. On March 30, she was discharged into the custody of her friends, improved in health, after consultation with Dr. Bristol, and presumably to return to his care. I have not seen or heard from her since.

With reference to the second allegation, that patients are held in Pavilion F in violation of the law, I know of only one case to which such a violently technical application of the law might be made. This patient is in the last stage of paresis, and a year ago was removed from another hospital by his wife, so that she might be near him in his last hours. On several occasions he appeared to be dying, but has rallied,

and lingers a mental and physical wreck, to whom and to whose wife the care given by the Pavilion has proved a blessing. It might be said in this connection, and with respect to this anxiety about the law, that this patient in the early stages of his malady was held by doctors and nurse in his home, while one of the physicians who signed the "Statement" introduced a tube into his stomach and fed him, in disregard of his inalienable rights as a sovereign American citizen. His wife has attended him patiently and conscientiously, believes that his comfort has been promoted and his life lengthened and fears that his removal would be cruel and inhuman and hasten his death.

That Pavilion F is not administered in violation of the law is well established by the action of the State Commission of Lunacy, who have the statutory control of the Institutions for the Insane of the State, and who have advocated the establishment of similar institutions, based upon the experience in Pavilion F, in other cities of the State; and by the Federal Government, who have adopted not only the idea, but the building plan for use at Ellis Island in New York Harbor.

With reference to the third allegation, that patients are excluded for want of room, it may be said that since the Pavilion was enlarged, at the end of its first year, it has never been filled. There are thirty-two beds, and the highest daily census has been thirty patients. So far as my knowledge goes, no proper case has ever been refused.

Finally, it is worthy of note that the "Statement" presented by these physicians advocates that the attending specialist should have "exclusive charge of all public or county cases." It is difficult to understand why a poor man should be deprived of his physician, because he cannot pay him, when a wealthy man is not. Disease is not a respecter of persons, and treats the rich and the poor alike. The problem presented by these physicians consequently appears to be based upon financial and personal rather than ethical reasons.

All of which is respectfully submitted.

(Signed) J. M. MOSHER,
Attending Specialist in Mental Diseases.

In regard to this communication from Dr. Mosher it is perhaps unnecessary for your Committee to say very much. Reference is made to the statement of Dr. Mereness, a member of the Committee, to the effect that he expresses approval of the present arrangement. It is understood that Dr. Mereness's statement at the hearing was mainly to the effect that the condition at Pavilion F objected to was principally due to Dr. Mosher's management of the Pavilion, and also to his personality. Dr. Mereness distinctly stated that he did not wish to present a minority report and he had already signed the statement presented by your Committee.

Dr. Bristol desires to say that Dr. Mosher's statement in regard to his case, referred to in Dr. Mosher's answer, was not correct. Dr. Bristol states that the case was not critically sick; that Dr. Mosher did not invite him to call and see the case; that he did not suggest any

line of treatment as stated; that he never consulted with Dr. Mosher in regard to the case and never saw the doctor but once; and that in seeing the patient subsequently he called as a friend only.

In regard to the second division of Dr. Mosher's reply in which he states, "with reference to the second allegation that patients are held in Pavilion F in violation of the law, I know of only one case to which such a violently, technical application of the law might be made. This patient is in the last stage of paresis, and a year ago was removed from another hospital by his wife so that she might be near him in his last hours." This patient was in Dr. MacFarlane's care, and had just been removed from the Marshall Infirmary, in Troy, an institution for the care of the chronic insane. His removal occurred on July 3, 1906, about twenty months ago. The physician in charge of the Marshall Infirmary states that he was in good physical condition. Your Committee fails to see why the law should be openly defied and the purpose for which Pavilion F was originally erected should be ignored by using the institution for the chronic insane. This Committee is apparently credibly informed that this is only one of several cases which have been retained at Pavilion F in defiance of law. The theory of Pavilion F as a place of temporary detention for the acutely insane is certainly a most admirable one and this Committee is heartily in sympathy with the plan. It is well that this example should be imitated in other parts of the country, but it certainly offers no excuse for the violation of the law of this State and we fail to see that it serves a desirable purpose in mixing acute and chronic insane cases.

In regard to Dr. Mosher's statement that in the case of Dr. MacFarlane the patient he was forcibly fed, "in disregard of his inalienable right as a sovereign American citizen," I would say that he had refused food for several days and was in imminent danger of starving to death. The practice of forced feeding, where the insane are trying to starve themselves, is dictated by every motive of humanity and decency, and is we presume practiced not only in Pavilion F but in every hospital for the insane in every civilized country.

In conclusion we would say that the idea that the insane are always dangerous and difficult to manage, and therefore on the point of committing murder or of killing themselves, is a fantastic idea of insanity prevalent among writers of fiction. New York State has probably 25,000 insane persons among its citizens. Many of these are in private institutions. In such institutions and in the better wards of such hospitals insane patients doubtless receive more liberty and less oversight than do the patients in Pavilion F. A physician of large experience in insane asylum work has recently declared that homicide and suicide are probably not any more common among the insane than among an equal number of other people. If family physicians were allowed to care for their own patients it does not seem likely that confusion or danger would result.

Pavilion F has accommodations for thirty-two patients and it is said that usually it does not contain more than half that number. Under the present arrangement physicians are refusing to send their patients to

the institution. The hospital is, in this way, turning away a source of income which it sorely needs. It has cost the County of Albany over \$36,000 for constructing and furnishing the Pavilion. The interest on this large sum of money together with the large yearly sums paid for its support by the county, give the citizens and taxpayers of this county a special right and interest in the institution. And yet the management of the hospital has to raise a deficit for this department amounting to about \$5,000 a year in order to maintain what is practically a private sanitarium for one physician. Many residents of Albany who are justly entitled to the benefits of this institution are denied the same because their friends will not send them except under the care of their own physicians.

The protest which has been made against the present conditions is not based upon commercial considerations but upon the broader principles of public right, personal liberty, justice and humanity. In our opinion patients have been sent, from the general hospital to Pavilion F upon the slightest pretext. One patient stumbles over a chair in going to the lavatory and is sent to Pavilion F. Another "tries to get out of bed" and is sent to Pavilion F. Neither case was insane and yet they were confiscated contrary to the wishes of the patients, their friends, as well as their attending physicians. This Committee begs leave to reiterate the conclusions made in their Statement made to the Board of Governors.

Very truly yours,

W. O. STILLMAN,
Chairman.

A. MACFARLANE,
F. L. CLASSEN,
H. E. MERENESS,
A. J. BLESSING,
W. S. BRISTOL,
Committee.

It was moved and seconded that the report be accepted, and printed in the ALBANY MEDICAL ANNALS. Carried.

Dr. HACKER asked if an attorney had been consulted by the Chairman of Committee, as he understood that the Society had an attorney.

Dr. STILLMAN replied that it seemed to be hardly a question for legal intervention, but depended upon the generosity of the Board of Governors of the Albany Hospital.

Dr. HACKER then asked as to how long the agreement holds between the Board of Supervisors and the Governors of the Hospital.

Dr. MERENESS said that inasmuch as his name had been used several times he felt that it required a certain explanation from him. In the letter that you have heard read to-night from Mr. Lansing he says that the plan Pavilion "F" was working under was suggested by the medical men of the Board of Governors, who are Drs. Ward, Vander Veer and Hun. We must believe with the Board of Governors that they have done what they believe to be for the best interests of all. I do not believe that the Board of Governors took into consideration either my

wishes or some other doctor's wishes. I do not believe that the Board of Governors could or would grant the request that we all take care of our patients in "F," and I myself, do not believe that it would work to the best interests of the hospital and the patients themselves. In a statement that I made, I said that I thought that Dr. Mosher had built up a plan that had a great deal of that which was good about it, for the Lunacy Commission of this State has not only recommended that plan to a number of cities, but it has been adopted by a number of cities and still other cities are preparing to adopt this plan. I do know, however, and I said to the Board of Governors, that in building up this plan I thought that Dr. Mosher had sacrificed the friendship of very many physicians of Albany. In order that I may not be misquoted I will read the statement as I read it that day:

January 12, 1908.

To the Board of Governors of the Albany Hospital:

DEAR SIRs.—After considerable thought and consultation with a number of noted alienists who have charge of hospitals for the insane, I am convinced that it would be neither wise nor safe for the best interests of the patients nor the hospital, to allow general practitioners to take charge of patients in Pavilion F, and that one person should be held responsible for all patients confined therein; although I think it highly desirable that such general practitioners have the right to visit their patients whenever they think it necessary, and to co-operate with the physician in charge in their treatment.

Yours respectfully,

Now, Mr. President and gentlemen of the Society, I believe that all of us could have taken patients there, that we could have visited our patients and that it would be satisfactory, and I do not believe that because Dr. Mosher is there that we should call on the Board of Governors to make a change that would not work for the best interests of all.

Dr. WARD called the attention of the members to the fact that there was no desire on the part of the Board of Governors to deprive any one of the privilege of consultation with Dr. Mosher. It is the opinion of the Board that they must have some one who can be held responsible.

Dr. NEUMAN then said that he would like to know just what the meaning of the term (*consultation*) was. If Dr. Mosher is in charge of a patient, and if the physician formerly in charge of this patient wishes to see him, and feels that he wants to exercise his judgment, whether his going there and shaking hands with the patient would be considered as a consultation? In Dr. Neuman's opinion, a consultation means an interchange of opinion between two men and the arrival of some conclusion as to treatment.

Dr. WARD said that the Board of Governors was not a medical dictionary, and that if Dr. Neuman would bring any complaint against Dr. Mosher it would be investigated.

In regard to this alleged consultation Dr. STILLMAN said that one simply had the privilege of going in to see the patient with Dr. Mosher, and then sending in a bill. One has no rights whatever. He said that

inasmuch as a patient in Pavilion "F" was compelled to pay two fees, it was hard on the part of the patient to meet the expenses; that it was hardly a fair thing.

Dr. JENKINS then spoke of an experience he had in "F." Mr. Hitte, a pugilist, who had been stabbed in the neck, was removed to upper "A," and becoming delirious was transferred to "F." Dr. Macdonald saw him, Dr. Mosher saw him, and I still had charge of him. In a business office one day, I overheard a conversation between two men. One said, pointing at me, "There's the fellow that cured Hitte." "Go on," said the other fellow, "it wasn't him; it was Mosher."

Dr. SHAW, Chairman of the Milk Committee, said that about a year ago a unofficial report was received to the effect that certain milk contained enough formalin to kill a hundred babies. This report was investigated, and the man who made the analysis, when called upon, acknowledged that he did not know how to make an analysis for formalin. The Milk Committee has been making tests monthly, sometimes more frequent, and has fulfilled in every way the duties imposed upon it by the Society. We sent forth broadcast three hundred circulars, explaining the requirements of the Committee in detail.

We refused to sanction the milk of one farmer who was not living up to the requirements. Dr. SHAW then read a report from the State Department of Agriculture. By request of the Committee the Commissioner of Agriculture sent a special dairy inspector, whose report was very satisfactory.

I have not the entire report of the bacteriological examinations, but for the month of December there were 860; January, 2,200; and our February count was 4,020. I think it is only fair to Mr. St. John to say that he is trying conscientiously to put forth milk which would be perfectly safe for the feeding of infants and invalids. This milk is sold at an increased cost, and perhaps the other dealers are jealous. The bottles are thoroughly cleaned and sterilized; the caps are all sterilized and put on by a separate man and a piece of paper put over each cap and sealed by a lead seal, so that it is impossible to remove this cap without destroying the seal.

Dr. WARD moved that this report be accepted, and that a great deal of credit should be given for the great amount of work that has been done. I have heard these reports in regard to Mr. St. John, have met and talked with him, and have been greatly impressed with the personality of the man, who has the appearance and manner of an honest man, and that a great injustice has been done him by those reports, which have been disproved to-night.

Dr. SHAW said that other committees connected with other medical societies from time to time send to each member a statement of what the Milk Committee is doing. If it were authorized by the Society, I would like to prepare a short abstract and send it to each member of the Society.

Dr. SHAW then spoke of the impending legislation now before the honorable bodies on the hill. We are all interested in the matter of

vivisection. Two bills have been introduced, each in their construction almost prohibiting the scientific investigations which have made the country and state famous. Those people back of the bill are having the best known attorneys in New York State to plead for the passage of the bill. It seems to me that we can devote a few hours on Wednesday afternoon to be present in the Assembly Chamber and show by our presence that we are opposed to this measure. This is a very serious matter and I do not think we appreciate the extent to which this hysteria has appealed to the public of New York City.

Dr. VANDER VEER wished to endorse all that Dr. Shaw said. Dr. John G. Curtis, Chairman of the Committee appointed by the State Society in regard to this subject of vivisection, has given a great deal of attention to having the profession understand the situation. There is a law at present which regulates to a certain degree the experiments on animals, and I do not think that it has been abused to any extent. The experiments carried out in our laboratories have been of great service to medical men and surgical men, but the impending bills will embarrass us. We ought to be present, as far as we can, and by our presence and by our speech emphasize the fact that it is wise to let well enough alone.

Dr. STILLMAN said that he did not wish to enter this discussion from either side. He said that both sides, in his opinion, were inclined to become hysterical. He also spoke of the effect of similar agitation in England. Personally, he believed that there should be a certain amount of restriction in regard to these experiments.

Dr. HACKER, reopening the Pavilion "F" matter, said that inasmuch as the Committee had done so much excellent work that a vote of thanks should be accorded them. Dr. Ward seconded the motion, which was carried.

Dr. CLASSEN asked whether there was or was not a bill adopted by this Society some years ago regulating fees, and in conformity with the schedule of rates of the American Medical Association?

The President replied that there was such a bill adopted by the Society many years ago, limiting the rate for a house call to \$1.50 and that of an office call to \$1.00.

Dr. CLASSEN moved that the fee list be printed. Carried.

MEDICAL.

For each visit in the city, by day.....	\$1.50 to	\$3.00
Night visit after 9 p. m. and before 7 a. m.....	3.00 to	10.00
Consultation visit, for the first time.....	5.00 to	10.00
Consultation visit, when repeated daily.....	2.00 to	10.00
Visit in the country, ten miles or less, first mile.....	2.00 to	3.00
Every additional mile.....	.50 to	2.00
Visit at longer distance by railroad, per mile.....	.50 to	1.00
Detention at house of patient, or in traveling back and forth, when more than one day is consumed, at the rate per day of.....	20.00 to	50.00

Examining case and prescription, with or without medicine	\$1.00 to	\$10.00
Certificate of health.....	3.00 to	5.00
Letter of advice.....	5.00 to	10.00
Physical examination of chest, heart or lungs.....	5.00 to	25.00
Gonorrhoea, in advance.....	5.00 to	20.00
Syphilis, in advance.....	10.00 to	50.00

MIDWIFERY.

For ordinary cases of midwifery.....	10.00 to	50.00
Instrumental delivery.	15.00 to	75.00
Extraordinary cases, as turning, embryotomy, etc.....	30.00 to	100.00

OPERATIVE SURGERY.

For capital operations, or operations of unusual difficulty, such as amputations of large limbs, ligation of large arteries, operation for stone in the bladder, removal of breasts, or other large tumors, operations for cataract, for strangulated hernia, for vesicovaginal fistula, for cleft palate, etc.....	35.00 to	500.00
according to the importance of the case and the pecuniary circumstances of the patient.		

For operations of secondary importance or difficulty, such operations as fistula in ano, for hare lip, for the radical cure of hydrocele, tapping and injecting of ovarian cysts, reduction of dislocations or fractures of large bones, amputations of fingers or toes, tracheotomy, removal of small tumors, not involving important organs, passing catheter in cases of obstruction, ligation of arteries of secondary size, etc..	25.00 to	100.00
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For minor operations, such as excision of tonsils, removal of nasal polypi, tapping for hydrocele, or ascites, opening abscesses, stitching recent wounds, etc.	50 to	25.00
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After surgical operations, all subsequent visits shall be charged as in ordinary cases of attendance

POST-MORTEM.

Post-mortem examination, without dissection.....	5.00 to	10.00
Post-mortem examination, with dissection.....	10.00 to	50.00

For all professional services not enumerated in the above, a proportional price is to be charged. In every case, in settling his account, the practitioner may make any deduction which he conscientiously believes the circumstances of the patient render necessary.

Dr. CLASSEN said that the physician works as hard as any other professional man and receives little in return for it, considering the time expended in preparation for the degree, the length of time that it takes for him to get that degree, the high cost of living, etc. I think that the lowest fee a physician should charge is two dollars, in confinement cases the lowest fee should be fifteen dollars. In settling the account of a patient the physician should take into consideration the circumstances. Dr. Classen said that he thought it ought to be the sense of this Society that the fee should be two dollars.

Dr. HOLDING said that there was some agitation at the present time regarding the establishing of those disease breeders, the pumps, in the southern section of the city; and moved that it be the sense of the Society that the re-establishment of these pumps would be a menace to public health.

Motion seconded by Dr. A. Vander Veer. Carried.

Dr. PEASE: Mr. Chairman, before the Society adjourns, there is a matter that I fear I have been rather dilatory about bringing before the Society. It comes from the Auxiliary Committee of the conference on medical legislation of the American Medical Association, and refers to the bill before Congress granting pensions to the wives of Drs. Lazear and Carroll, who were the victims of their discoveries regarding yellow fever. I think it might be well if the Society would appoint a committee to draw up resolutions from transmission to Congress. Certainly this Society and every body of medical men cannot fail to appreciate the services of these men. I would move, Mr. President, that it be the sense of the Albany County Society that these bills be passed by Congress, granting pensions to the widows of Drs. Carroll and Lazear.

The following resolution was adopted:

Whereas, Bills have been introduced into Congress providing for the granting of pensions to the widows of Drs. Jesse W. Lazear and James Carroll, members of the Yellow Fever Commission, which discovered the transmission of yellow fever, and

Whereas, Drs. Lazear and Carroll died as the result of experimental infections of yellow fever;

Resolved, That the Medical Society of the County of Albany earnestly urge the Hon. Thomas Platt and the Hon. Chauncey Depew and the Hon. G. N. Southwick to use every effort to forward the passage of these bills.

Adjourned.

ARTHUR J. BEDELL, *Secretary*.

GEORGE G. LEMPE, *President*.

Medical News

Edited by Arthur J. Bedell, M. D.

THE THIRTY-FOURTH MEETING OF THE ALUMNI ASSOCIATION will be held on Commencement Day, May 19th, at Alumni Hall. A special effort is being made to make it an enjoyable and attractive occasion. The general Alumni meeting will be held in the morning and the address of welcome will be made by Prof. MacDonald, followed by the reunion of classes. Those of '58, '68, '78, '83, '88 and '98 will hold special meetings, receiving full reports by the class historian.

The non-resident alumni will be entertained for luncheon at the Albany Club. At the commencement exercises in Odd Fellows' Hall, Rev. Dr. George Alexander, Chancellor *ad interim* of Union University, a most forceful and entertaining speaker, will deliver the address to the graduating class.

At eight o'clock a beef-steak dinner will be served followed by an amateur minstrel performance in which good music, fun and wit will be so intermingled that everyone will say it was the evening of his life.

THE ALBANY GUILD FOR THE CARE OF THE SICK—STATISTICS FOR THE MONTH OF MARCH, 1908.—Number of new cases, 131; classified as follows: Dispensary patients receiving home care, 7; district cases reported by health physicians, 8; charity cases reported by other physicians, 62; moderate income patients, 54; old cases still under treatment, 81; total number of patients under nursing care during the month, 212. *Classification of diseases* (new cases): Medical, 41; surgical, 8; gynæcological, 2; obstetrical, 36 mothers and 30 infants under professional care; dental, 1; eye and ear, 4; skin, 9; contagious diseases in medical list, 12; removed to hospitals, 44; deaths, 7.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 3; medical students in attendance, 4; Guild nurses in attendance, 4; patients, 4; number of visits by head obstetrician, 6; by attending obstetrician, 1; by the medical students, 330; by the Guild nurses, 46. Total number of visits in this department, 83. Visits of Guild nurses (all departments): Number of visits with nursing treatment, 1,360; for professional supervision of convalescents, 244; total number of visits, 1,604. Cases were reported to the Guild by four of the health physicians by forty-three other physicians and by one dentist. Eight graduate nurses and four assistant nurses were on duty.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on May 9, 1908, for the following positions: Assistant Civil Engineer, \$5 to \$6 a day; Bookkeeper (fourth grade), \$720; Bridge Designer, \$1,500 to \$2,100; Bridge Draughtsman, \$1,200 to \$1,500; correspondence Censor, State Prisons, \$900; Health Officer, Town of Brasher, St. Lawrence County; Highway Inspector, \$3.50 to \$4.50 a day; Instructor in Shoe Industry, State Prisons, \$1,300; Leveler, \$4.50 to \$5 a day; Mechanical Draughtsman, \$900 to \$1,500; Page, State and County Offices, \$300 to \$360; Phy-

sician, State Hospitals and Institutions, \$900 and maintenance; Stereotyper, State School for the Blind, \$600 and maintenance; Telephone Operator State and County Offices and Institutions, \$360 to \$720; Woman Officer, State Institutions \$300 to \$360 and maintenance.

The last day for filing applications for these positions is May 2nd.

Full information and application forms for any of these examinations may be obtained by addressing the Chief Examiner of the Commissioner at Albany, Charles S. Fowler, Chief Examiner.

AMERICAN PROCTOLOGIC SOCIETY.—The tenth annual meeting of the American Proctologic Society will be held June 1 and 2, 1908, at the Palmer House, Chicago, Illinois. An interesting program will be rendered.

AMERICAN THERAPEUTIC SOCIETY.—The ninth annual meeting of the American Therapeutic Society will be held at the Bellevue-Stratford Hotel, Philadelphia, May 7th, 8th and 9th, 1908. A very elaborate program, including symposia on diseases of the Vascular System, The Treatment of Tuberculosis, and Roentgen Ray Therapy has been arranged.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION will on June 1 and 2, 1908, hold its annual meeting at Chicago, Ill. A program of unusual interest will be presented.

INTERNATIONAL MEDICAL CONGRESS.—The sixteenth International Congress will be held in Budapest from August 29th to September 4th, 1909. Those desiring to submit papers have until December 31st, 1908, to notify the Secretary.

A NEW HOSPITAL SCHEME.—The physicians of Schenectady have in operation a hospital established upon a new plan. Believing that there was room for a hospital owned and operated by physicians, a stock company has been formed, of which over sixty practitioners have taken stock. From these a board of twenty-seven directors has been elected, and a large building in the city purchased and equipped. There are twenty-five beds for patients and a training school for nurses. There is no staff, but each physician treats his patient in his own way. The general management of the hospital is looked after by an Executive Committee consisting of the President and four other members of the corporation. The institution is now in active work, and at the opening inspection on April 9th was visited by several thousand people. The first board of directors consists of Dr. George E. McDonald, President, and Drs. E. M. Stanton, Frank Van de Bogert, John H. Collins and Charles F. Clowe, each one of whom serves a term of three months as acting Superintendent. The result of this novel plan will be awaited with interest.

UNION COLLEGE.—The alumni of Union College have raised \$100,000 and Mr. Carnegie has added a similar amount. One-half of this sum will be used in the construction and equipment of the new school of engineering and the remainder will be used for the general endowment of the college. The new structure will probably be located in the college pasture, opposite North College.

ALBANY COLLEGE OF PHARMACY.—The class of 1908 held their commencement exercises in Odd Fellows' Hall, Wednesday evening, April 15th. Of the thirty who graduated two were women. Rev. Edwin Ellery, of Union College, delivered the address.

ENGAGEMENT.—Mr. and Mrs. W. H. Murdock, of Cooperstown, N. Y., announced the engagement of their daughter, Helen, to Dr. Floyd J. Atwell (A. M. C., '07), of Troy, N. Y.

PERSONALS.—Dr. RICHARD M. PEARCE, for the past five years director of the Bender Laboratory, and professor of Bacteriology and Pathology, Albany Medical College, has resigned to become professor of Pathology of the New York University and Bellevue Hospital Medical School.

—Dr. GEORGE E. BEILBY (A. M. C., 1899), of Albany, sailed for Europe April 18th.

—Dr. BENNO G. TROIDLE (A. M. C., 1898), has moved from McPherson Terrace to 4 Clinton Ave., Albany.

—Dr. CHESTER E. TRACY (A. M. C., 1904) has removed from Nassau, N. Y., to Schodack Landing.

—Dr. EVERAL C. HAVILAND (A. M. C., '04) is now first assistant physician at the Brattleboro Retreat, Brattleboro, Vt.

—Dr. LOUIS LEBRUN (A. M. C., 1891) was one of the subscribers to the "Abschieds-Feier" of Privy Councillor, Professor Dr. Adam Politzer, celebrated October 2, 1907, at the General Hospital in Vienna. Dr. LeBrun has recently received a personal acknowledgment from Dr. Politzer, accompanied by the reprints of the addresses and a relief bronze portrait medallion.

DIED.—Dr. DWIGHT FLOWER (A. M. C., '65), for many years a practitioner of Monticello, Wis., died at his country home, near River Falls, Wis., March 15, aged 69. He was a member of the American Medical Association.

—Dr. HENRY C. PECK (A. M. C., '75), Coroner of Broome County, N. Y. in 1899, died suddenly at his home, Port Dickinson, from hemorrhage following a violent attack of coughing, March 19th, aged 54.

—Dr. HAMILTON A. WHITE (A. M. C., '80), of Fort Plain, N. Y., died March 20th, from pneumonia, after an illness of six weeks, aged 58.

—Dr. WILLIAM J. PENNINGTON (A. M. C., '91) died March 30, at home, Brooklyn, N. Y., aged 42. He had been connected with the Department of Health ten years.

—Dr. JOHN REA CREIGHTON (A. M. C., '61), surgeon in the Civil War, died at his home in Spokane, Wash., March 27, from Ludwig's angina, after an illness of two days, aged 72.

—Dr. OBEDIAH T. ELLISON (A. M. C., '56), the oldest practitioner in Potter County, Pa., died recently at his home in Condersport, where he had practiced for fifty-two years, aged more than 80.

In Memoriam

DWIGHT FLOWER, M. D.

Dr. Dwight Flower was born in the town of West Rupert, Bennington County, Vermont, in 1839. When he was sixteen years of age his parents moved to Iowa and settled in Humboldt County. He received his early education in the district school and at the age of twenty-one entered Antioch College, Greene County. After a year he went to Schenectady, N. Y., and entered Union College, where he graduated. He afterwards attended medical lectures at Long Island Hospital and at Albany Medical College, receiving a diploma at the latter institution in 1865. He studied at Heidelberg, Berlin and Vienna, spending nearly two years at these places, and commenced the practice of his profession in Buchanan County, Iowa, where he remained a short time. He went to Wisconsin and located at Arena, Iowa County, remained there two years and then settled in Monticello. This was about 1873. He remained in Monticello one year and then removed to Belleville. After he had spent a year at Belleville, friends induced him to return to Monticello. He died at River Falls Sunday morning, March 15, 1908.

He married October 23, 1879, Kate L. Roser, and was the father of eight children, three of whom have preceded him in death. The surviving children are Dwight E., Gretchen, Charline, Rupert and Jeanne.

In the Monticello *Messenger* the following feeling tribute to Dr. Flower is published: "There are no words at our command by which we feel that we can fittingly portray the sincerity of the deceased's noble character. The writer has known him from boyhood up and in all these years he has heard naught but good of him. Upright and honorable in all things, he early in his career gained the respect and confidence of his fellow men and, as the years rolled by and his sterling qualities became better known, he became so firmly established in the hearts of the people that no other physician was ever able to successfully cope with him as long as he cared to remain in the field. He was possessed of a benevolent disposition and was generous to a fault. He was seemingly more interested in relieving the trials and tribulations of others than he was in laboring for his own welfare, and it may be truthfully said that none ever lived a life that was more clearly in keeping with the Golden Rule than was his. He was a friend to the rich and the poor alike, and, whether or not there was any probability of his fee forthcoming, no call for his services was ever made in vain.

"After years of self-sacrificing toil the doctor gave up active practice in Monticello and removed to his farm near River Falls, Pierce County, there to spend his remaining years midst nature's surroundings. No one ever left the community whose removal caused as keen regret as did that of him and his estimable family, and, at a gathering of old friends and neighbors on the eve of their departure, many an eye was dimmed with tears as they listened to a few parting words from the

one who for years had been their trusted family physician. It was the fervent prayer of many ardent friends that he might find health and happiness in his new home, that he might enjoy at least a few years of peace and quiet after a life of unrelenting toil, but cruel fate decreed it otherwise, and, after a few brief months in his new home, most of which time his health had been very poorly, he was compelled to give up the unequal struggle, bid adieu to the loved ones about him and close his eyes forever to the scenes of earth. Although he has passed to that land from whence no traveler ever returns, he is still with us in fancy, and though years may pass on and on, memories of his noble character and visions of his kindly countenance and familiar figure will ne'er grow dim or misty."

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The Principles and Practice of Modern Otology. By JOHN F. BARNHILL, M. D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine; and ERNEST DE W. WALES, B. S., M. D., Associate Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine. Octavo of 575 pages, with 305 original illustrations, many in colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.50 net; half morocco, \$7.00 net.

The authors have kept the following objects in view in the preparation of this excellent book: To modernize the subject; to correct certain traditional beliefs; to advocate the earliest possible prophylaxis or treatment; to emphasize the importance of a thorough examination and a definite diagnosis as a basis for rational treatment, and to thoroughly illustrate the text. In considering prophylaxis and treatment the authors truly state that while much attention has been given to the surgical aspect of otology, too little has been paid to the prevention of aural affections. Throughout the entire work the statement is made that prevention of aural diseases is usually easy in early childhood, whereas benefit or cure as a result of treatment in later life is often impossible.

The first three chapters of the book and the pathology have been written by Dr. Wales and the balance by Dr. Barnhill. The part of the book dealing with the bony anatomy is very well illustrated but is not always entirely clear. A new nomenclature has been given the semi-circular canals, viz., the superior cerebral, posterior cerebellar, and the tympano-mastoid semi-circular canals. This nomenclature is inferior to that used in Germany, namely, anterior vertical, posterior vertical, and horizontal semi-circular canals.

No mention is made of the auditory nerve filaments and their termination.

The bacteriology is well described, but many otologists will not agree with the statement, that while the bacteriology of the ear is interesting

from a scientific standpoint, it is from a practical view-point of the least importance.

Dr. Barnhill, in the chapter on acute tubotympanic catarrh, has practically dropped the term paracentesis, and substituted incision of the tympanic membrane. This is an excellent change, and should be universally adopted. The chapter on mastoid surgery and its complications is very well written, and in considering the radical operation the point is brought out that there is danger of injuring the facial nerve when a protector is used, because of the thinness of the upper wall of the Fallopian canal where it forms part of the floor of the aditus ad antrum.

C. F. T.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, the Specialties, and other topics of interest to Students and Practitioners, by leading members of the medical profession throughout the world. Edited by W. T. LONGCOPE, M. D., Philadelphia. *Volume III.* Seventeenth series, 1907. J. B. Lippincott Company, Philadelphia and London.

Among the many excellent articles which this volume contains we have selected a few for passing comment as being the ones best calculated to interest the general practitioner.

Curability of Tuberculosis. E. S. BULLOCK, M. D., Silver City N. M. The writer takes a much less optimistic view of the prognosis than the usual one of the day. To quote his words—"No cure has been discovered that I am aware of, yet we have hastily removed tuberculosis from the list of incurable diseases and classed it as curable. * * * Dr. Musser is perfectly right when he says 'tuberculosis is sometimes curable.' * * * A larger number of my cures relapse among those who return East than among those who remain West. This is proof positive to my mind that these people should remain in the climatic and social environment in which recovery occurs."

Blood Pressure in Tuberculosis. WM. B. STANTON, M. D., Philadelphia.

In a series of two hundred and twenty-two cases the following are among the facts deduced:—

The blood pressure, systolic and diastolic, in tuberculosis is generally low.

The blood pressure in tuberculosis bears an inverse ratio to the pulse rate.

The blood pressure is higher in improving cases and lower in progressing and unfavorable cases.

Hemorrhage is apparently not accompanied by increased pressure.

The Salient Factors in the Estimation of Renal Disease. RAYMOND WALLACE, M. S., M. D. "The kidneys are primarily organs for the elimination of water, the products of metabolism and other excrementitious material, and the index of renal function is to be found not so much in the quantity of abnormal products, such as albumen and casts,

that are eliminated, as in the preservation of the normal ratio in the excretion of its normal products."

The Etiology and Experimental Study of Syphilis. By FREDK. P. GAY, M. D. Hathorne, Mass. This is a very interesting description of the immense amount of work done along these lines in the past few years, the following is a summary of the facts learned: "First, the cause of syphilis is the spirocheta pallida, an organism of which the class is yet undetermined, and which has not been cultivated on artificial media; the spirochetes occur in the primary, secondary, and even the tertian lesions of syphilis, and the infectiousness of these lesions varies directly with the numbers of organisms present. Secondly, we have seen that the length of the incubation period in animals varies directly with the intensity of the reaction to syphilitic virus * * *. Thirdly, it has been found that a fixed virus of passage in lower monkeys may be used to vaccinate higher monkeys against fully virulent human virus; and a similar treatment has been suggested as possible in man. The production of a specific serum curative in syphilis is by no means improbable.

H. D. C.

Diseases of the Nose and Throat. By D. BRADEN KYLE, M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fourth edition, thoroughly revised and enlarged. Octavo volume of 725 pages, with 215 illustrations, 28 in colors, Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$4.00 net; half morocco, \$5.50 net.

In presenting the fourth revised edition of his book, the author has followed the same general plan and arrangement as in previous editions. Many new articles have been added, among them being: Lithemic Rhinitis, Chronic ulcers, Glioma of the nose, Telangiectoma, Bone-cysts of the accessory sinuses, Empyema of the Antrum of Highmore in the young, Rhinopharyngitis mutilans, Gangrene of the tonsil, Actinomycosis of the tonsil, Vincent's Angina, Glandular pharyngitis lateralis, Cyanotic pharyngitis, Pharyngeal Aneurism, Cough, Congenital stridor, Bronchoscopy, Defects of Speech, Relation of the voice to hearing, etc.

Each subject has been taken up from a general standpoint, and under diagnosis, pathology and treatment, all systemic conditions in their relation to the special diseases of the nose and throat are considered. The author gives his well-known views on sialosemiology from the standpoint of the diagnostic value of the saliva.

The various diseases of the nose and throat are classified in a logical way. Following is an example:

Simple Acute Rhinitis.

a. Acute rhinitis in constitutional conditions.

1, Measles; 2, Pertussis; 3, Scarlet Fever; 4, Small Pox; 5, Typhoid Fever; 6, Rheumatism; 7, Diabetes Mellitus; 8, Diphtheria; 9, Erysipelas; 10, Scorbutic Rhinitis; 11, Anemic Rhinitis; 12, Scrofulous Rhinitis; 13, Caseous Rhinitis; 14, Epidemic Influenza; 15, Lithemic Rhinitis.

Taken as a whole it may be said that Dr. Kyle's book is a distinct addition to nose and throat literature.

C. F. T.

The Practical Medicine Series. The Eye, Ear, Nose and Throat. Edited by CASEY A. WOOD, C. M., M. D., D. C. L., ALBERT H. ANDREWS, M. D., and GUSTAVUS P. HEAD, M. D. Series 1907. The Year Book Publishers, Chicago, Ill.

This compact, neatly bound, inexpensive, little volume of 350 pages gives an instructive resumé of much of the years's literature in these special lines. As in previous numbers the subject-matter is arranged under appropriate headings and carefully indexed making it of decided worth to those who haven't the time for exhaustive reading. Illustrations and diagrams add to its value as an unique review. A. J. B.

SURGERY

Edited by Albert Vander Veer, M. D., and Arthur W. Elting, M. D.

Recent Advances in the Morphology and Origin of Tumors. (Neuere Forschungen über Morphologie und Entstehung der Geschwülste.)

ERNST SCHWALBE. *Deutsche medizinische Wochenschrift*, No. 49, 33 Jahrgang, December 5, 1907.

During the past few years an unusual amount of interest has been manifested in the investigation of tumors, especially as regards their etiology. The writer emphasizes the fact that advance in this line can only come on the basis of pathological anatomy and the comparative and experimental pathology, as well as investigations in immunity. He emphasizes the false position of those who have originated a theory and then attempted to prove it, as, for instance, in the question of the parasitology of tumors. Johannes Müller made the first important microscopical investigations of tumors, and Virchow laid the foundation for the modern pathology of tumors.

The writer believes that in the investigation of tumors three phases should be considered: first, the morphology; secondly, the morphological origin, and, thirdly, the etiological origin.

Experimental methods have added very much to the knowledge of tumors, especially as to their etiology, and this work has been done for the most part on the lower animals.

The importance of the study of the histogenesis of tumors is illustrated by the hypernephromata which originate from misplaced adrenal tissue and which may present all the characteristics of a malignant tumor. Another striking example of the importance of this phase of the investigation is the chorion epithelioma, formerly called deciduoma. It has been found that primary chorion epitheliomata have originated some distance from the uterus, which demonstrates that certain of the chorionic villi must have become loosened and lodged in other parts of the body. Bone tumors which present the type of thyroid tumors illustrate the same phenomenon. The demonstration of chorion epitheliomata in males is also of the greatest interest and has given rise to the belief on the part

of some that these tumors may originate from the endothelium. Krompecher has also endeavored to distinguish a new group of malignant tumors, which he calls basal cell carcinoma, a group which he believes occupies the mid position between carcinoma and sarcoma. Of interest, furthermore, in these investigations, are the melanoma, melano-sarcoma, and chromataphoroma, as these tumors have been called by Ribbert. These tumors originate from the pigment cells and belong to the connective tissue group of tumors. In fresh specimens the cells present numerous processes which are much branched. They also contain a very rich protoplasm. They alone possess the function of manufacturing pigment, although they may not always do so. These tumors may sometimes be pigmented and sometimes not. Investigation has further shown that the cancer cells may possess a very definite function. This can be frequently observed in metastasis, as for instance that metastasis from intestinal carcinoma may produce mucous. Carcinoma of the liver or its metastasis may secrete bile. Carcinoma of the thyroid or its metastasis may secrete colloid. It is also a well known fact that carcinoma of the adrenals does not give rise to the symptoms of Addison's disease. M. B. Schmidt has demonstrated that in a relatively large number of cases of carcinoma emboli of carcinoma cells have been microscopically demonstrable in the vessels of the lung. Schmidt has demonstrated that evidently large numbers of carcinoma cells must be destroyed by the action of the cells and fluids of the body, which is a point of considerable interest in the healing of carcinoma.

Morphological studies have also demonstrated the fact that lymphosarcomata deserve a special classification among the tumors. The Cohnheim theory is of the greatest importance in connection with the morphological origin of tumors. Ribbert believes that the enlargement of a carcinoma is due entirely to its own growth and that the surrounding tissues are not transformed into carcinomatous tissues. Ribbert further emphasizes the fact that a tumor grows partly as a result of a lessening of the resistance of the tissues about it. The small round-celled infiltration frequently found in the vicinity of tumors Ribbert believes is an indication of this lessened resistance.

The etiological origin of tumors is the phase which has been most investigated during the past decade. The transmissibility of tumors is an extremely interesting phenomenon, but it has been demonstrated that tumors cannot be transmitted from man to animals, although the transmission from one animal to another has been in many instances successful. Hanau was the first who clearly demonstrated the possibility of such transmission from rat to rat. Jensen has done a great deal of the same kind of work in transmitting tumors from mouse to mouse. The percentage of successes in the transmission of mouse tumors varies from ten to one hundred per cent. The continued transmission of the tumor through many generations apparently increases its virulence.

Another very interesting observation is the fact that as a result of repeated transmissions a tumor may change its morphological character. Ehrlich and Apolant have demonstrated that under such conditions a carcinoma may be transformed into a sarcoma. The writer states that

as yet there is no evidence of the parasitic origin of tumors and that none of the parasites so far described can explain the origin of tumors. The writer furthermore does not believe that there is any evidence in favor of regarding the cancer cell as a parasite in itself. He does not regard the so-called immunity doctrine of tumors as any indication of the parasitic origin of tumors. Ehrlich has demonstrated the transmissibility of a chondroma, and states himself that it is very difficult to believe that such a tumor could be due to a parasite.

The observation that transplantation is unsuccessful when cells are rubbed up or macerated is a further argument against the parasitic origin. Studies in immunity, especially those made by Ehrlich, are of the greatest interest, and it has been demonstrated that mice and rats may be rendered more or less immune against the inoculation of tumors by the inoculation of tumors of lessened virulence which give rise to no actual new growth. This, together with the fact that small masses of cancer are frequently destroyed within the human body, leads us to hope that some positive therapeutic results may come from the continued studies of immunity.

NEUROLOGY

Edited by Henry Hun, M. D.

A Contribution to the Analysis of Cerebral Hemiplegia. (Beitrag zur Analyse der cerebralen Hemiplegie.)

C. T. VAN VALKENBURG. *Archiv für Psychiatrie und Nervenkrankheiten*, 43 Band, 3 Heft, 1908.

In the residual stage of typical hemiplegia the following conditions exist:

(1) Unilateral paralysis (paresis) or contraction of the oral branch of the facial nerve;

(2) Deviation of the tongue when protruded to the paralyzed side;

(3) Paresis of the upper extremity, which is particularly characterized by:

Position: The arm is adducted to the trunk and rotated inward, the shoulder slightly drooped, the elbow more or less flexed, even to a right angle; the forearm pronated, the wrist flexed, extended or in mid-position; the fingers flexed, often upon the thumb, and occasionally adducted;

Motility: All movements are confined, both in grasp and strength, as well as in freedom, though in very different degrees. All delicate movements of the fingers are suspended, as well as elevation of the arm above the horizontal. The common movements of the wrist, elbow and shoulder joints are more or less restricted;

Passive Resistance: This is most marked when movements are attempted in opposition to the position of the paralyzed limb, as by adduc-

tion and outward rotation of the arm, extension of the forearm, supination of the hand and extension of the fingers.

(4) The paretic lower extremity is affected as follows:

Position: This is influenced by the use to which the limb is put. In lying or sitting, there may be more flexion in the hip than in the knee, although less than in the healthy side. In walking both these joints as well as the ankle, are in extension, although not to the maximum. The thigh is adducted.

Motion is suspended in none of the joints mentioned; isolated movements of the toes are usually impossible; otherwise the conditions are analogous with those of the upper extremity.

Passive Resistance is similar to that of the arm; it is increased on flexion of the hip and knee and dorsal flexion of the foot.

After a minute inquiry into the dynamics of the muscles concerned in hemiplegia, the author states the results in the following conclusions:

(1) Hemiplegia is to be regarded principally as a unilateral universal static and dynamic ataxia, brought about by lesion of the more important centrifugal tracts, and disturbances of balance in the subcortical and spinal centres.

(2) This disturbance of balance is prominent both in the individual centres, and in the antagonistic.

(3) The ataxia shows itself in voluntary movements;

(a) In regular participation of contraction and relaxation in the use of coördinating muscles; as a result of this irregular innervation the movements show the widest variations from the normal; under certain conditions they cannot be carried out, and the ataxia increases to paralysis. This latter is to be attributed to the diaschisis; when the impulse to make a movement frequently throws all the co-operating muscles into strong contraction, whereas the intended movement requires the relaxation of a part of these muscles.

(b) In associated movements; part of these must be regarded as functionally imperfect contractions accompanying the motor manifestations, in the sense that they co-operate abnormally under the influence of the subcortical stimulus. On account of the abnormal innervation from the cortex, the independence of these is lost.

(c) In the suspension of the customary movements which are directly associated with activity of the Rolandic area (as the more finely directed and habitual movements).

(4) The disturbance of balance from within the individual centres shows itself,

(a) In changes in the reflexes, which appear in proportion to the character of the disturbance in either a positive or a negative way. Complete loss of reflexes, apart from complicating diseases, is to be regarded as a diaschisis symptom. There is no occasion to distinguish between superficial and deep reflexes in regard to the localization of their centres. The qualitative modification of the plantar reflex (Babinski) is the

direct result of the lack of cortical control. It is by no means necessarily the result of degeneration of the pyramidal tracts.

(b) In changes in tonicity.

Static ataxia may effect this:

(a) In reducing the entire musculature of the hemiplegic extremities to a state of hypotonicity or atony. (Diaschisis symptom.)

(b) In increasing the tonicity by increasing the general irritability of the subcortical centers, so that the tension of different muscle groups varies with the activity of the antagonists.

(5) The disturbance of balance in the subcortical centers leads to conditions of early contraction which may be carried over into late rigidity.

There is no special distinction between paralysis and contraction.

A Contribution to the Symptomatology of Paralysis Agitans. (Beitrag zur Symptomatologie der Paralysis agitans.)

OTTO LUDWIG KLIENEBERGER. *Monatsschrift für Psychiatrie und Nervenkrankheiten*, January, 1908, Band XXII, Heft I.

Two cases are reported. The first was a man of forty-seven, who sustained a blow upon the occiput with cerebral concussion, and shortly afterward suffered from pain in the region injured, vertigo and darting pains in the left leg. Four months later he appeared changed and five months after that he presented a mask-like countenance, outspoken muscle rigidity with weakness, propulsion and retropulsion, pronounced tremor of the hands and arms persisting during rest and intensified on movement, sensory, vasomotor and secretory disturbances, increased knee-jerks, contraction of the visual field, alimentary glycosuria and diminution of all mental processes. The second case was that of an hysterically disposed woman of fifty-eight who suffered from hypochondria with muscle rigidity and tremor of the left upper extremity, developing slowly without ascertainable cause. In the course of a year the muscle rigidity became universal, with writing posture of the left hand, weakness, propulsion and retropulsion, vasomotor, trophic and sensory disturbances, intensified knee-jerks, loss of the reflexes of the skin and mucous membrane of the left side, and pronounced mental defect.

Charcot believed that the absence of intention tremor differentiated paralysis agitans from disseminated sclerosis, but one of these cases shows an exaggeration of the tremor on voluntary movement, and indeed extended in distribution. Muscular rigidity is a prominent symptom and may determine the diagnosis in the absence of the tremor. The vasomotor and trophic conditions are usually revealed as cyanosis of the extremities, but in the second case the lower extremities were livid, and there was also atrophy of the skin, which may be attributed to vasomotor changes or to arterio-sclerosis. Bruno, Conepin and Frenkel have re-

ported thickening and oedema as well as wasting and glossy skin. Subjective paraesthesiae are common, and many authors deny objective sensory anomalies, which are usually attributable to some associated disease as locomotor ataxia or hysteria. Others have found diminished pain, hyperaesthesia, hypaesthesia, and, indeed, many variations from normal sensibility. Loss of smell and taste and contraction of the visual field must however, be regarded as hysterical, and in these cases hysteria was present, in the first, traumatic, and in the second, temperamental. The characteristic symptoms of paralysis agitans in these cases leave little doubt, and this condition was associated with hysteria. The mental defects, as diminished comprehension and intelligence, were particularly significant of paralysis agitans rather than hysteria. States of depression are not common in paralysis agitans and some writers have noted the contradictory exhilaration in spite of the severe physical disorder.

Tabes and Pseudo-Basedow.

E. V. MALAISE. *Monatsschrift für Psychiatrie und Neurologie*, XXIII, 2, February, 1908.

The simultaneous appearance in the same person of tabes and Basedow's disease is an infrequent though authenticated occurrence, though the question has been raised as to whether this is a coincidence or not. Féréol, in 1874, noted incoördination like that of tabes in a case of exophthalmic goitre. The absence of lancinating pains and eye disturbance prohibited the diagnosis of tabes. Bariés advanced the theory that exophthalmic goitre might be caused by an invasion of the medulla by the pathological process of tabes and discovered atrophy of the solitary bundle and the restiform body. Various combinations of neuroses have been seen, and have been explained as symptoms originating in the sympathetic. If the case should appear as an outspoken tabes, the question as to whether the combination was one with exophthalmic goitre, or a condition which might be called pseudo-tabes, would not be difficult to answer. But the case may appear as incipient tabes, in which the scant symptoms might as well be attributed to exophthalmic goitre.

The notes of a case are recorded in which tremors of the hands, tachycardia, cardiac palpitation, exophthalmos, widening of the palpebral fissure were added to symptoms of outspoken tabes. In another case gastric crises followed one year after the specific infection. A few years later the patient noticed dilatation of the pupils, the tabes progressed fairly rapidly, and the following symptoms appeared: the eye-balls protruded, especially the left, and with marked mydriasis; for a while there was a delicate, rapid tremor of the hands, increased on exertion; the heart's action was more rapid, and there was profuse sweating; there was diarrhoea; the thyroid showed no changes; the pupillary light reactions were inhibited; Graefe's sign slight.

The two cases may be recapitulated as follows:

(1) Both patients had in common exophthalmos and widening of the

lid aperture (in each more pronounced on the left side); pupil dilatation on the side of the more prominent eyeball; Graefe's sign; increase of pulse rate, with emotional excitability of the heart; tremor; loss of pupil response to pain.

(2) Besides these signs there were, in the first case, slight ptosis, defect in convergence; and in the second, lachrymation, diaphoresis and diarrhoea.

It thus appears that in individual cases of tabes the sympathetic system is involved, particularly in the cervical region, which is especially predisposed by reason of the late development of the fibres. In incipient cases it is often difficult to make the differential diagnosis between exophthalmic goitre and tabes with sympathetic symptoms, or, between tabes and exophthalmic goitre. That in individual cases of combination of exophthalmic goitre with tabes syphilis provides the pathogenic bond of union, is not very probable, in spite of the fact that the sympathetic system may be involved by the toxine causing the tabes, especially because this combination of diseases is very uncommon.

A Form of Familial Degeneration of the Cerebellum.

GORDON HOLMES. *Brain, Part CXX, Vol. 30, 1907.*

Four cases of a peculiar degeneration of the cerebellum occurring in the same family are reported, with the autopsy in one case. There were eight members in the family. The symptoms appeared between thirty-three and forty years of age and progressed slowly until death, which resulted from an intercurrent affection at an advanced age. The first and most prominent symptom was a reeling or staggering gait, "like that of a drunk person," evidently due to incoördination of the lower limbs or to defect in equilibrium; the next symptom to appear in each case was irregularity in, or uncertainty of, the movements of the upper limbs; and later articulation was affected; it became hesitating or scanning and explosive. Tremor of the head and limbs was mentioned in the notes of all the cases, and was referred to as a prominent symptom by the sister who was interviewed. Nystagmus, or more probably irregular nystagmoid jerkings of the eyes on movement, was observed in the three cases of which accurate notes are available. There was no defect of vision or of hearing, and no motor paralysis or sensory disturbance was detected. The tendon-reflexes were unaffected or slightly exaggerated, but ankle-clonus or other certain evidence of disease of the cortico-spinal tracts was not obtained in any of the cases. The sphincter functions were intact, and there was no obvious mental impairment.

The anatomical basis of these symptoms was a degenerative affection of the cerebellum. The disease was limited to this organ, as the inferior olives were the only other part of the nervous system in which pathological changes were found, and in these it is shown that it was only secondary and of no significance in the production of the symptoms.

There can be little doubt as to the nature of the pathological process

in this case. Both its clinical features and its morbid anatomy point to the disease having been a primary and progressive degeneration of the nervous elements of the cortex of the cerebellum and of the fibres which spring from them. The most prominent change in the cortex was the disappearance of the Purkinje cells, which was complete in the greater part of the cerebellum, but it seems impossible to determine from the facts available whether this was the primary affection, or whether it was secondary to the disease of the other elements, or, thirdly, if all the cells of the cortex were equally affected from the beginning.

PSYCHIATRY

Edited by G. Alder Blumer, M. D.

The Manic-Depressive Psychoses—Emotional Insanity. (Die manio-depressive Psychose—das Stimmungsirresein.)

S. THALBITZER. *Archiv für Psychiatrie und Nervenkrankheiten*, 43 Band, 3 Heft, 1908.

After observations made upon the different states of mental depression and mental excitement it was noticed that some forms of mental depression were attended by agitation and melancholia. The melancholia was recognized as a definite clinical manifestation of insanity. Later, circular and periodic insanity was recognized as a condition of alternating mania and melancholia. This combination of antagonistic symptoms in the same individual has lately given rise to attempts to separate a class of cases under the title of "Manic-Depressive Insanity," where the elements of melancholia and mania are to be found in the same patient at the same time. In melancholia the essential symptom is an emotional condition of depression, whereas in mania there are a state of exaltation, rapid, disconnected thought and motor restlessness. Kraepelin has collected under the title "Manic-Depressive Insanity" all cases which have previously been recognized as periodic insanity, circular insanity and simple mania. Thalbitzer groups the cases somewhat differently on the basis of the three groups of mental manifestations, and describes a passive melancholia in which there is extreme mental depression without motor action; productive passive melancholia in which there is extreme mental depression with motor and mental activity; and melancholia with active and disconnected thought, that is, a condition in which one symptom of melancholia is associated with one symptom of mania; unproductive passive mania consisting of maniacal tone without activity, and unproductive agitated mania.

Thalbitzer gives a synopsis of some very interesting anatomical and physiological theories. From the circle of Willis arise three pairs of arteries which supply respectively the frontal, the parietal and the occipital lobes of the brain. That is to say, that the intellectual areas of the brain, the motor areas of the brain and the sensory areas of the brain are each dependent upon the blood supply of a specific artery. From this

it is inferred that knowing, willing and feeling are modified when the respective arteries for the areas of the brain which have to do with these functions, are diseased or disordered.

Thalbitzer then makes a study of the vaso-motor control of these blood vessels and quotes from Dawson as follows:

(1) The emotional condition induced by cerebral anaemia is one of depression.

(2) In mental depression the general circulation is under high arterial tension.

(3) The general circulation during states of excitability is under low arterial tension.

The vaso-motor control of the cerebral circulation depends upon the sympathetic nervous system and in connection with the third and fourth cervical nerve roots is a triangular tract of nerve fibres which is thought to have been diseased in mental cases.

The Prognosis of Recurrent Insanity of the Manic-Depressive Type.

HENRY M. SWIFT. *American Journal of Insanity*, October, 1907.

The author studied one hundred and five cases, of whom seventy-four were women and thirty-one were men. Of these cases the attacks were depressive in character in thirty-one, maniacal in thirty, circular in thirty-six, and irregular types in eight.

The points which have seemed to be of use in estimating the future course of the disease from the consideration of the first attack were as follows:

- (1) Whether the attack is an excitement or a depression.
- (2) The age at which the first attack occurs.
- (3) The natural make-up of the individual, particularly in regard to neurotic or other abnormal tendencies.
- (4) Habits, in particular alcohol.
- (5) Menstruation.
- (6) Relation of attack to a previous head injury.
- (7) Whether the attack might be considered to be due to a direct exciting emotional cause.
- (8) Character of the individual attack, whether typical or modified by various irregularities, particularly symptoms of a catatonic nature.

From his inquiry the author derives the following conclusions:

Other things being equal, the prognosis for depressions is in general better than for excitements. Intervals after depression are, as a rule, long; after excitements they are commonly short.

The longest interval after excitements occurred in those cases with first attack under thirty in men, and between thirty and forty in women.

In long interval cases, whether of excitement or depression, the second interval is usually shorter than the first; while in short interval cases the lengths of the intervals tend to be about equal.

Excitements after forty and depressions after fifty, whether with or without a history of a previous attack, usually occur at short intervals.

In both excitements and depressions the length of the second attack is usually greater than that of the first. This tendency is more marked in the depressions.

Factors which would appear to darken the prognosis are advanced age, inborn neuropathic taint, close relations of attacks to menstrual disorders, atypical or irregular features appearing in the attack, and very possibly previous alcoholic excesses and head injury.

Factors suggesting a good prognosis are a previous normal disposition and perhaps the fact of the appearance of the attack after some exciting cause.

While exceptions to these rules occur and the prognosis in a given case will always be attended with some degree of uncertainty, yet it would appear that, after a careful balancing of the various factors above-mentioned, an approximate prediction might usually be made.

Poriomania. (Weitere Beiträge zur Poriomanie.)

JULIUS DONATH. *Archiv für Psychiatrie und Nervenkrankheiten*, 42 Band, 2 Heft, 1907.

In a former communication (1899) Donath directed attention to the occurrence in epileptics of sudden, uncontrollable impulses to wander about or to travel, which subsided equally suddenly, after a variable time. Afterward the patients regard the attacks as foreign to their dispositions and incomprehensible, and a source of regret. These morbid mental states occur without appreciable disturbance of consciousness or subsequent loss of memory and from the frequently accurate descriptions of the journeys given by the patients an occasional clouded recollection for either all or a part, does not assume any particular importance. The impulse usually precedes certain physical (vasomotor) or mental symptoms, and during its activity there is a pronounced diminution of fundamental requirements, as eating and sleeping. Epileptic poriomania is a genuine manifestation of the paroxysm without loss of consciousness and occurs in the course of classical epilepsy, to which it bears some causative relation.

Three cases are reported. In two the attacks followed complete loss of consciousness, one being a case of traumatic epilepsy, and the other a case, in the absence of other determining symptoms, probably of epilepsy. The third case was that of a degenerate, who began to wander during a period of restlessness. The first patient left the house and was followed by her mother from street to street from eight o'clock in the morning until four in the afternoon, during which time she spoke to no one, and took no food or drink. She knew nothing of the trip afterward. The second patient, a young man of twenty, suffered for four years with headaches and dizziness. He lost consciousness and wandered aimlessly about for three days, controlled by the thought that he must be shot.

Of what he did in this time he knew absolutely nothing. When he came to himself he went home, suffered from headache and remained in bed three days. The third patient was a mechanic of twenty years who lost his home for ten days, and was returned forcibly. He presented a number of symptoms of nervousness and recalled perfectly the events of his irregularity, which is attributable to a psychasthenic state.

The Acute Traumatic Psychoses. (Zur Kenntniss der akuten traumatischen Psychosen.)

MAX SOMMER. *Monatsschrift für Psychiatric und Neurologie, Ergänzungsheft*, 1907. *Festschrift für Otto Binswanger*.

Mental changes, particularly weakness, have been observed as a result of wounds about the head, and an occasional claim has been made that these are characteristic. Friedmann states that in sixty per cent. of severe injuries to the head mental and nervous defects are seen as long as a year afterward. Some authors report a state of confusion of that duration followed by forgetfulness, and others a protracted psychoses directly after the injury. It is important to ascertain whether the symptoms are really pathognomonic, and that a definite clinical picture is revealed as typical of the mental state due to trauma. The distinction must be held between a transitory concussion of the brain and a serious injury producing gross anatomical changes. When multiple wounds to the brain have been inflicted, as in fracture of the skull and focal destruction, the case may be compared with conditions ensuing upon arteriosclerosis. Even in apparently lighter cases multiple lesions may occur, and it is difficult sometimes to differentiate between a destructive process and one limited to concussion. It is doubtful, then, that a typical concussion in the traumatic psychoses exists. Kalberlah believes that Korsakoff's syndrome is to be found in acute traumatic cases.

Sommer reports two cases. In the first case mental symptoms followed immediately upon coma of several days' duration. These symptoms were characterized by emotion and increased egotism, ideas of grandeur, disturbances of the faculty of attention, and confabulation. After two months the symptoms diminished, and the memory of the beginnings of the attack was blank, and a focal symptom remained in thickness of speech. In the second case the mental symptoms ensued immediately upon the revival from shock. The patient understood all that took place, knew where he was, and what was said, manifested no delusions or hallucinations, but was notably apathetic. He was untidy and indifferent, irritable and shameless. Wernicke would call this condition a moral defect. In his text-book he describes a hebephrenic, climacteric and senile form of this psychoses and admits that it may be called forth by trauma. It is known that injuries of the frontal lobes are followed by changes in character, and it is possible that in this second case such an injury occurred, although the patient recovered.

In conclusion the author finds no definite anatomical or clinical condition to characterize traumatic cases as a group. As in some other diffuse or general cerebral affections Korsakoff's symptoms are seen but these cannot be regarded as typical, as they occur in other forms of mental disturbance.

*Observations on the Treatment of General Paralysis and Tabes Dorsalis
by Vaccines and Anti-sera.*

W. FORD ROBERTSON and DOUGLAS McREA. *Journal of Mental Science*, Vol. LIII, October, 1907.

The authors report further investigations upon their work with the diphtheroid bacillus isolated from the brain and the bronchus of a case of general paralysis which they found was capable of producing a disease in rats giving symptoms similar to those of general paralysis, and showing post-mortem, characteristic changes in the brain. They prepared an anti-bacterial serum and after immunising sheep ascertained that another species of diphtheroid bacillus produced analagous results and therefore employed both types of bacilli in the therapeutic experiments. They employed a suspension of a weighed quantity of the bacilli in two and five-tenths cubic centimeters of sterling saline solution heated to sixty degrees centigrade for fifteen minutes. Injections of this emulsion were given subcutaneously, by mouth, through the nose and, in one case, per rectum. The local effects were insignificant, although serum urticaria occurred in nearly every case. When the serum was given by the mouth nausea, vomiting and diarrhoea occasionally followed.

The general effects were chiefly drowsiness, diaphoresis and malaise, whilst polyuria and exacerbation of chronic leucorrhoea were occasionally observed. Immediately after injection, or in about half an hour in oral administration, flushing often occurred; some of the patients complained of being giddy, with a "tight feeling" in the head and a "stiffness of the face." Some experienced temporary loss of vision. In one case the patient was blind in one eye for ten minutes, nearly twenty-four hours after injection. Others asserted they felt as if they were drunk. Vomiting occurred in some cases after hypodermic injection. Mentally, many of the patients became more confused; most of them experienced an unusual sense of well-being, and some were hilariously excited. The speech, gait and co-ordination were for a time more impaired, whilst the tremors were increased, and many of the patients complained of shooting pains and sensations of numbness and tingling, or feelings of "pins and needles."

The temperature action is characteristic, and so far as experience goes it is diagnostic. It has for its features a rise to 100° F., or more, when the serum is given hypodermically, and to 99° F., or more, when given by the mouth. This rise occurs within twelve hours and is over in twenty-four, although in the case of mouth administration it may be delayed till the following day.

The pulse-rate is usually increased, but on account of its erratic character in cases of general paralysis and other forms of mental disease (well seen in a study of the charts of these cases kept for over a year), no useful data can be obtained.

The serum was tested originally in four cases of general paralysis in the final stage of the disease. In addition to a raising of temperature a few hours after the injection, a remarkably lucidity of mind temporarily supervened in three cases. One patient, who was in a congestive seizure and comatose, became quite conscious two hours after injection of fifteen cubic centimeters of serum, and the convulsions ceased and did not recur. She remained conscious and lucid up to the time of her death, fifteen days later. Recently another patient admitted to the asylum while in a congestive attack, who rapidly developed coma, became quite lucid within an hour of the administration of the serum. The convulsions persisted, however, and she died in two days, but maintained consciousness to the end.

In conclusion the authors say:

(1) That the anti-sera with which they have been working produce reactions which are diagnostic of general paralysis or *tabes dorsalis*; they are probably due to the liberation of endo-toxins.

(2) Cases of these diseases treated with the sera in most instances undergo improvement.

(3) A polyvalent anti-bacterial serum is likely to be more efficacious than either the mono or bi-valent serum used.

(4) One of the chief obstacles in the way of obtaining a very potent serum has been the loss of virulence in the strains of the organisms used.

(5) There are grounds for believing that an anti-toxic serum would be of use, especially for the immediate treatment of congestive seizures.

(6) Lastly, in view of the presence of dissolving bacilli in the brain of the general paralytic, where in all probability they produce extremely virulent endo-toxins, another aim should be the production of a serum containing chiefly an anti-endo-toxin.

ALBANY MEDICAL ANNALS

Original Communications

SOME GLIMPSES OF THE PAST.

*The President's Address to the Montgomery County Medical Society,
December 11, 1907.*

By HORACE M. HICKS, M. D.,
Amsterdam, N. Y.

One hundred and one years ago last June a group of men representing the medical profession of the county of Montgomery met at Johnstown and organized the present society that I have the honor to address. Even the names of those men we do not know. What a pity! Time, that great leveler, and carelessness, that great curse, have worked together to deprive us of the privilege of even erecting a tablet to their personal memories. One hundred and one years ago the state society was organized, and the organization at Johnstown the same year shows how up-to-date and energetic our medical progenitors were. The county of Montgomery at that time included, besides our present area, the counties of Fulton and Hamilton. From such a wide territory came these men, serious in their purpose, to found a society for mutual improvement. I will not take your time in reciting to you their struggles. The story of the profession one hundred years ago is well known to us all, the only thing that could be added being a local coloring and that I shall not attempt. One hundred years ago! It depends on what time in the world's history we utter these words. If we had lived one hundred years ago and were prospecting with a mental tape measure backward over the previous one hundred years for events of a scientific nature, we would be impressed with the scarcity of ideas compared to the standard of supposed excellence of 1907.

Julius Caesar and Washington were both on the same level

as far as rapid transportation was concerned. The official or pompous dress for the profession at that period was velvet knee-breeches, a red coat, lace frills and a cocked hat. If you asked me as to their habits and manners I should say that both were excellent, and that they were good judges of how in part a medical society should perform its duties, as witness the following report of one of the earlier treasurers: "Item, \$6.62½ for liquors and dinners for the society."

Medical education was highly prized but very difficult to obtain. America was still in almost a savage state, civilization being confined almost entirely to the ports, New England, the Hudson and Mohawk valleys. There were but four institutions where a medical education could be obtained—the University of Pennsylvania, Harvard, Columbia and Dartmouth—and their curriculum was noted mostly for what they did not teach. So education was taught by the able men of the profession in the communities in which they lived as it has ever been since the dawn of history.

In 1806 Thomas Jefferson was president. We had hardly recovered from the grilling we had received during the Revolution, when the following year Britain again threw down the gauntlet by taking men from the Chesapeake, one of whom they hung as a deserter. War was in the air, and it culminated in 1812 by giving us continued freedom from English rule. It was during the year 1807 that Fulton steamed up the Hudson from New York to Albany—and, by way of diversion, I might add, that had that group of men, Watts, Fulton, Bessemer and Lister, lived one hundred years before, I think we would yet be a British colony. It was also this same year that the importation of slaves was forbidden and Aaron Burr's conspiracy was launched. Shelley, Byron, Sir Walter Scott, Thomas Paine, Wordsworth, Coleridge, Southey, Haydn, Goethe, Irving, Cooper and Madame DeStael were all living at the time. Of the men of our profession then living whose names have since been immortalized were Jenner, Auenbrugger, Lannec and Johann Miller.

Our ancestors in the Old World had teeming millions of human associates, the same as we have to-day. Life was cheap to a point that was beyond the pitiful; it was ridiculous. Does the public appreciate the fact that in the fourteenth century 25,000,000 of human beings lost their lives from the plague in Europe

alone, and that to-day over 200,000 human beings die from the plague annually? Smallpox in the eighteenth century killed 60,000,000 of people in Europe alone, and in the year that Jenner inoculated Phipps and began that glorious crusade that has given us freedom from this horrible scourge, 2,000,000 of people were sacrificed by it in Russia alone. Then it is not numbers or strength that has brought us to the position that we now occupy, but science. Jacquard, Howe, Watts, Bessemer, Pasteur, Lister, Morton, Franklin and Edison have done more for civilized society than all the warriors since Cain killed Abel. Does not then scientific study and research pay, and would it not be a good investment to endow more institutions? Does it not pay, then, from a financial standpoint to encourage the profession in its efforts; is not every dollar given to build or endow hospitals returned to the public one hundred fold by the improvement and expansion of the profession in the vicinity—for these institutions offer to the profession great opportunities for scientific study and research? This subject of encouragement by endowment is our tender point. Why should the clergy have per student some \$2,300 while we poor M. D.'s get less than \$90 per student?

But I will stop. It is useless to elaborate on events of the past. We members of a great profession find it to our mutual interest and undeniable advantage to form ourselves into societies. The coming together and getting acquainted, the reading of papers, the orally related case, the presentation of specimens, these are constant and continual helps, and the discussion that follows, no matter how far apart the views may be, all help to keep awake and develop in us the more advanced ideas in the practice of a profession in which we are bound to use our best efforts to protect and care for that most sacred and holy temple in the universe, the body of man. It stimulates harmony, it is a great leveler of prejudice, vaunting superiority and unmitigated conceit, for it was the Creator who said: "It is not well for man to live alone." It certainly is not well for him to practice medicine alone or to wrap a cloak of satisfied superiority about him and say, "my grace and knowledge are sufficient." If he does he will awake some morn and find that he has been fooling with a formula, the contents of which are composed of what the late Senator Ingalls termed "an iridescent dream."

The profession is constantly changing, the men of to-day are gone to-morrow. Young men are taking their places, and it is

to these younger men in the society that I wish for a moment to speak. We welcome you; we want you to feel at home; do not hold yourselves apart or aloof, but get "into the game" and stay to the finish. These older men in the profession have great clinical experience; you have recent and excellent educations. We can help each other. Do not allow a spirit of avarice to keep you away from the Medical Society. I need not call your attention to the fact that a good medical education is a very difficult thing to acquire. One of our greatest teachers has very well put it in these words: "No class of men needs to call to mind more often the wise comment of Plato that education is a life-long business; the difficulties are partly adherent to the subject, partly have to do with the individual and his weakness. The problems of disease are more complicated and difficult than any others with which the trained mind has to grapple; the conditions in any given case may be unlike those in any other. Law constantly looking back has its forms and procedures, its precedents and practices. Once grasped, the certainties of divinity make its study a delight and its practice a pastime." Then the fact is self-evident that he who would keep his education has to work to do so. I heard Dr. Trudeau make the epigrammatic statement, that the man who wished to stand still nowadays had to run just as hard as he could. We are on the wheel, to put it in the language of Buddha, and we must keep moving or be carried backward.

AMERICAN MEDICAL ASSOCIATION.

Out of a membership of forty-six, nine attended the meeting of the association at Atlantic City in June last. This is a very commendable showing. Every member should make a supreme effort to attend the Chicago meeting in June. It's a little post graduate course that is sure to bring its reward.

THE DISTRICT BRANCH MEETING.

The annual meeting of the Fourth District branch of the American Medical Association of this state will be held some time in September here in Amsterdam. The city of Amsterdam and Montgomery county were honored at the meeting at Saranac Lake this year by having one of our best known physicians, Dr. Charles Stover, elected president. The enthusiasm and earnestness that were exhibited at the Saranac meeting both by

the profession and by the citizens of Saranac make it incumbent upon us to make a great effort to furnish entertainment and an interesting social program for the visiting doctors.

PROPRIETARY REMEDIES.

County societies from Maine to California are awaking to the proprietary medicine nuisance and are passing resolutions negative to their use and abuse. Scientific and elegant pharmacy is always welcomed, but this monstrosity, proprietary medicine, is in many instances not even on speaking terms with the word science. The profession must stop accepting its samples and cease putting itself under obligations to such an octopus.

CORONER'S FEES.

The board of supervisors is considering the advisability of increasing the salary of that official at Amsterdam. It is certain that under the present system a gross injustice is done. A laborer is worthy of his hire, and while no malice is felt toward the board, one cannot but feel, under the circumstances, that this body is underestimating the services of the coroner, and the basis for those thoughts is due to a consideration of the salary received by each member of the board of supervisors. Let them do the office justice or abolish it altogether, either will be welcome.

PUBLIC HEALTH.

It is time we were more of a unit in our efforts to control tuberculosis. This is a vexed question. Such an ubiquitous terror as this white plague it is hard to control. Its presence in our homes, affecting those nearest and dearest, renders anything in the line of arbitrary regulations obnoxious to the people, and is taken as an infringement on their personal liberties. Still we can by the aid of the press give the subject a good airing. People with tuberculosis even in the earliest stages should sleep alone. This is not done in a majority of cases so far as my observation goes. Sanitation with all that the name implies is the master key to the situation. The isolation and placarding of contagious diseases are very important and should receive the support of the entire profession.

Vaccination is also important, and school boards should be a unit in the work of encouraging vaccination.

The century just past, I might say the latter half of it, has apparently a monopoly, a trust-like grip on three of the greatest blessings that have been given to mortal man since fire was stolen from heaven—sanitation, anaesthesia and asepsis, with all their collateral branches. The perpetuity of the everlasting hills is not more secure than these scientific facts.

As to the future, you members of a profession whose roots of origin are so woven into the dim past that the "glories that were of Greece" are like an event of yesterday, whose founder and father descended from one of the gods of mythology, whose literature and work are a part of biblical history, what will be the future? This—that study and research will carry our profession to a point of perfection where disease will be prevented, not cured; that death will result from two causes only, accident and old age. This, when accomplished, will make the lamp of Aladdin look like a glow worm in an eternity of darkness.

A CONSIDERATION OF THE "HERD" THEORY AS AN ETIOLOGICAL FACTOR IN OZENA.

*Read at the February meeting of the New York Academy of Medicine,
Laryngological Section*

By CLEMENT F. THEISEN, M. D.,

Clinical Professor, Diseases of Nose and Throat, Albany Medical College.

In this paper the writer will limit himself to a consideration of the "Herd" theory as a cause for atrophic rhinitis. Ozena which according to its Greek derivation means really a stench should not be considered a disease by itself, but rather a symptom of some other underlying pathological progress.

It seems to the writer that it would be less confusing to speak of all cases in which the characteristic atrophic changes with crust formation are present, as cases of atrophic rhinitis, whatever the cause may be.

In considering the etiology of ozena or atrophic rhinitis from the view-point of accessory sinus disease, the "Herd" theory of Grünwald, Hajek, Löhnberg, Michel and others, I of course, am fully aware that we can only explain a certain percentage of the cases in this way. But I am convinced that a fairly large percentage of ozena cases are associated with disease of the accessory cavities.

I would like briefly to give the results of my own observations: In 1904, in the January number of the *ALBANY MEDICAL ANNALS*, a preliminary report of the results of examinations of the accessory sinuses in ozena cases was given. In this paper the twenty-one cases then reported will be briefly reviewed, and a further report of thirty-nine cases will be given, sixty in all. These were all cases in which the characteristic atrophy of the membrane with crust formation was present.

In eight of the twenty-one cases first reported, positive evidence of sinus disease was found. In four cases chronic maxillary sinusitis, in two combined with chronic ethmoiditis, existed. In three cases ethmoiditis existed alone, cases of unilateral atrophic rhinitis, and in one case chronic frontal sinusitis and ethmoiditis.

In the three cases in which the ethmoid cells were found diseased the atrophic process was practically confined to the middle turbinal body, and in these cases a direct etiological relationship certainly appeared to exist between the ethmoid disease and the localized atrophic changes. These cases were greatly benefited by curettage of the ethmoid cells.

In the second series of thirty-nine cases accessory sinus disease was found in six cases. In two cases ethmoid and antral disease was found, in two ethmoid disease alone, in one frontal and ethmoid, and in one ethmoid and sphenoid. In this series of cases also, in the two cases in which ethmoid disease was found, the atrophic process was practically limited to the region of the middle turbinate. The writer's cases then show fourteen cases of accessory sinus disease out of sixty ozena cases, or about twenty-five per cent.

The methods used in arriving at these results were briefly as follows: In every case as thorough an investigation as possible of the accessible sinuses was made. The nostrils of each patient examined, were first freed of crusts, and thoroughly washed out, and then transillumination was employed. The maxillary antra in all cases in which the patients consent could be obtained, were punctured in the usual way through the naso-antral wall and washed out. In the cases in which it was found that antral disease existed, decomposing and usually foul smelling secretions were washed out.

The diagnosis in the cases in which chronic frontal sinusitis was found was made by transillumination and by washing out

the sinus when possible. In one of these cases the radical operation was performed, and a greatly thickened and degenerated membrane with some pus was found. The nasal condition was greatly benefited by the operation. In one case in which ethmoid disease had been found, a large sequestrum was removed. It was part of the left lateral ethmoid mass. The ethmoid cells were filled with a thick foul smelling secretion. This patient was probably a syphilitic subject.

Time will not permit me to give a detailed report of every case in which sinus disease was discovered but it may be of interest to consider one or two of the individual cases.

In the case of Miss S., aged 30 years, a foul smelling discharge had existed since childhood. In this case ethmoid and sphenoidal sinus disease was present. The atrophic process was so extensive that the sphenoidal sinus could be readily probed. Several operations were performed with the result that the crust formation and odor have practically disappeared. This patient I have had under observation for many years.

In another case, a boy, aged nine years, there was a history of an attack of nasal diphtheria five years before I saw him. His mother, who contracted the disease from him, stated that from the time he had diphtheria he had suffered from occlusion of the nostrils and an offensive yellow discharge. On examination both nostrils were filled with badly smelling soft crusts, and the typical atrophy was present. When the crusts were removed pus could be seen in the middle meatal region of both nostrils, and was found to come from the maxillary antra. Cultures were taken from both nostrils and examined in the Albany Bender Laboratory by Drs. Pearce and Winne, who reported that they showed the presence of typical diphtheria bacilli in conjunction with an organism that was probably Friedländer's bacillus mucosus capsulatus. The non-virulency of the organisms was proved by inoculating guinea pigs with pure cultures of the bacilli obtained from the nose. The animals all remained well. The mother positively stated that the boy's nose had never troubled him before his attack of diphtheria, so that in this case there does not appear to be much doubt that the antral empyema caused by the diphtheritic infection was responsible for the typical changes in the nose. It is also of interest that the bacilli were still in the nose after five years.

The majority of the cases of atrophic rhinitis seen by the

writer occurred in children and young adults, and in many cases a history of measles, scarlet fever, or diphtheria from which the patients had suffered early in life was obtained. A common statement of the mother or father was that the child had had a yellow discharge and bad smell from the nose off and on since the attack of scarlet fever or diphtheria, and this brings us to what I believe is one of the most important etiological factors in connection with the Herd theory of atrophic rhinitis and a strong argument in its favor.

The discharge from the noses of these children, following their infectious disease was caused by an infection of one of the accessory cavities, and it is a reasonable deduction that in some such cases the mechanical irritation produced by the more or less constant discharge would finally lead to the atrophic changes in the membrane.

The investigations of Pearce are of interest in this connection, because they show the frequency of accessory sinus disease as a complication of diphtheria and scarlet fever in early childhood. Pearce examined the accessory sinuses of fifty patients who had died of diphtheria or scarlet fever in the Boston City Hospital. Thirty-nine cases of diphtheria were examined and in twenty-five changes in the accessory sinuses were found, both antra in sixteen, both antra sphenoid and ethmoid sinuses in two, one antrum only in five and the sphenoid sinus only in two. Of the eighteen double antrum cases the exudate on both sides in three was a thick yellow pus, in three a purulent fluid with membrane, and in one a cloudy serous fluid with membrane. Five cases of diphtheria with scarlet fever were examined and in two, changes in the antra were found, one was unilateral and contained a thick yellow pus. Two cases of diphtheria with measles were examined and both antra in each case contained a sero-purulent fluid. Four cases of scarlet fever were examined, one antrum was normal, in one case there was a double empyema, and in another both antra and the sphenoid sinus contained greenish pus.

Forty-four of these children were between the ages of two and six years. The fact that cultures from the nose showed the presence of diphtheria bacilli which in some cases on record persisted for months and years, is of great importance, because in such cases the infection undoubtedly persisted in the sinuses, and it is probable that sinuses so infected would not get well

until they were opened and properly treated. Such conditions in very young children would very likely go unrecognized for a long time and there is no good reason why the more or less constant discharge over the mucous membrane would not finally produce localized atrophic changes. There is no doubt that many of the cases of so-called purulent rhinitis of childhood belong in this class.

Emil Mayer has also reported a case of purulent antral empyema in a child two and one-half years old, following scarlet fever and diphtheria.

These reports prove the fallacy of the theory advanced by some writers that cases of atrophic rhinitis reported in very young children could not be secondary to sinus disease, because the accessory sinuses did not exist so early in life. It is probable that a large percentage of children who have had infectious diseases have as a result a purulent sinusitis, and a certain percentage of them certainly later on have an atrophic rhinitis.

Löhnberg, who at the present time is perhaps the most enthusiastic advocate of the "Herd" theory, states, that he found the accessory cavities diseased in every one of seventy-nine ozena cases, *i. e.*, twenty-four times an empyema of the sphenoid sinus, six times of the frontal, ten times of the ethmoid cells, and thirty-nine times of the maxillary antrum. This is certainly a strong argument in favor of this theory. Alexander quotes the investigations of other authors who reported twenty-two autopsies of atrophic rhinitis cases. The accessory sinuses were diseased in eight of these cases.

Michel believes that ozena depends mainly upon a purulent inflammation of the accessory cavities particularly the ethmoid cells and sphenoidal sinuses, and Grünwald also states that a considerable percentage of ozena cases are caused by purulent processes in the accessory cavities. While Hajek is of this opinion he does not believe that this alone is sufficient to explain the pathogenesis of the whole clinical picture of ozena.

In conclusion it appears to the writer that the "Herd" theory offers the most reasonable explanation for a fairly large percentage of atrophic rhinitis cases. None of the other theories, the rarefying osteitis theory, the theory that the atrophic process follows a previous hypertrophy of the membrane and others too numerous to mention give a satisfactory explanation for the large amount of secretion necessary to form

the large crusts we see in some cases. The function of the mucous glands must certainly be seriously interfered with when they become destroyed as they do in severe cases, because microscopical examinations do not show glandular elements in tissue atrophied to the extent that it is in certain advanced cases of atrophic rhinitis. The secretions in many of these cases must come from the neighboring sinuses.

If the theory that a rarefying osteitis, producing a shutting off of the blood supply to the mucous membrane, is correct, why should it in some cases produce atrophy and in others just the opposite condition, edema and polypoid degeneration of the membrane?

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THE CLINICAL TYPES OF ALCOHOLIC INSANITY.

Read by Invitation Before the Medical Society of the County of Rensselaer on November 12, 1907.

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It is no longer disputed that chronic abuse of alcohol is capable in itself to cause mental aberration not only in those who are pre-disposed to insanity but also in those who are free from hereditary taint. The moral and the intellectual decay of a toper, usually keeps pace with the disintegration of his physical health. But aside from this general deterioration we frequently meet with instances of marked alienation, induced by alcohol, which present a diverse symptomatology and which can be conveniently grouped under several well-defined clinical types. Such a classification does not merely possess scientific interest, but is also of considerable practicable importance.

First, we may consider "Pathological Intoxication." It is a psychosis, sudden in onset and characterized with great psychomotor excitement, often with true furor. The subject in the midst of a drinking bout seizes any articles, such as chairs, within his reach, smashes windows, assaults those about him, regardless of consequences, apparently controlled by wild hallucinations. Shortly he falls into a prolonged sleep out of which he awakens exhausted and confused with complete amnesia of all the devastations he might have occasioned. These attacks occur without warning and last only a few hours. Sometimes the excitement is replaced by coma and paralysis of all mental activity, followed by sleep and total oblivion. Examples of Pathological Intoxication are fairly common, especially in metropolitan districts.

A second variety of alcoholic insanity is Delirium Tremens. The clinical picture of this disorder is sufficiently familiar and need not detain us long. The attacks usually after sudden abstinence, is initiated with vivid hallucinations of sight, combined often with those of hearing and other special senses. The subject lives as if in a dream, suffering agonies of torture; occasionally attempts suicide in order to escape from his fancied tormentors. He is restless, tremulous, pounds on the walls, pursues imaginary objects in the air. There is obstinate insomnia. One peculiar characteristic of delirium tremens is its analogy to a dreamy state out of which he is awakened by questions or other stimuli and then he appears for the time being sensible and well-behaved, but as soon as he is left alone he falls anew into his dreamy state at the mercy of his false sense-perceptions. Another characteristic of the disease is, that while the patients are disoriented for time and their surroundings yet retain good grasp of their personal identity and past life. Delirium tremens, as a rule, lasts only a few days and with the advent of the "critical sleep" the active symptoms are practically at an end. Now and again, however, there occur cases that pursue a long course and are known as "protracted delirium tremens." Such a case may be cited.

S. B. when seen for the first time seemed collected and composed, gave a history of excessive drinking for several months past. He had a cut in his throat, self-inflicted, of which attempt at suicide he had no recollection. He felt tired and "foggy" in the head but otherwise appeared convalescent. Two

days later, in the morning, he was noticed gazing steadily at a point in the ceiling, entirely abstracted. He paid no attention when he was addressed and after considerable urging he simply muttered "I see, I see." In the afternoon of the same day he volunteered to explain as follows: "I want to beg your pardon, Doctor, I couldn't help it. I wanted to answer you but I couldn't. I fancied I saw streams, angels and then it seemed as if voices were calling to me and said that I was not wanted here; if that's true, Doctor, I'll go away * * *." On closer inquiry he described a number of fantastic visions that appeared real to him at the time but he realized their fanciful character a few hours later. These attacks of ecstasy with vivid auditory and visual hallucinations recurred daily, lasting several hours, with almost complete lucidity in the intervals. They gradually disappeared and he was discharged recovered at the end of five months.

Another group comprises the cases of "Acute Hallucinosis," to which belong the majority of the committed insane suffering with alcoholic psychoses. It was accurately described by Marcel in 1847, but to the late Carl Wernicke must be attributed the credit for bringing into prominence its salient features and establishing its clinical entity. The following case is a typical example:

A. C., aged 40, laborer, addicted to alcohol, one evening while at supper, imagined some one was calling his name on the street. He looked out of the window but there was no one to be seen. As soon as he resumed his seat at the table he heard once more the same voice, this time calling him a vile name. His search failed to discover any one. Shortly there was a multiplicity of voices, some coming from the floor, others from the walls, which denounced him and threatened death. The voices declared that a warrant was issued to arrest him for alleged crimes. The entire night was spent in rummaging the house, looking behind the doors, going from one room into another without being able to find out wherefrom came these annoying voices. The following morning, while on his way to work, he noticed that every passer-by looked at him suspiciously and seemed to know what there was on his mind. Soon he heard again, "there he is, the rascal, he won't escape it this time," etc. Perplexed and exasperated and imagining that a stranger walking a few steps ahead of him was the author of one of the voices, he assaulted him publicly. This led to his arrest

and subsequent commitment. On admission to the hospital he was collected and composed, knew the time and where and why he was and gave a full account of all that had transpired. He complained bitterly of the unjust accusations which the voices made against him. At the end of three weeks the voices had ceased to annoy him, he realized their morbid character and was eventually discharged recovered.

The principal features of this psychosis are that it invariably follows prolonged sprees, auditory hallucinations predominate and are always of painful character, giving rise to resentment and aggressiveness. Unlike delirium tremens the sensorium remains clear throughout. Surprised by the sudden appearance of the phonemes patients often attempt to explain and thus build up a chain of delusional ideas; they accuse their wives and best friends of putting a "dope" in their drink in order to get them out of the way. Especially apt they are to develop delusions of jealousy and conjugal infidelity. The disease lasts a few weeks and in some instances may extend into months but the vast majority of the cases recover fully from their first attack. Unfortunately recurrences are extremely common as many of the patients go back into their drinking habit and thus one attack follows another with gradually decreasing intervals until they pass into a condition of dementia. There are certain symptoms in the manifestations of this disease which make the prognosis even for the first attack unfavorable, viz., the prominence of olfactory, gustatory and tactile hallucinations, especially electrical shocks; ideas pertaining to the auto-psychic sphere of the patient such as obsessions, being hypnotized and lastly yet of greater significance is a certain reserve, suspiciousness and attempt of concealment.

A fourth variety of alcoholic insanity is that accompanying multiple neuritis. In addition to the polyneuritic disorder this psychosis presents a combination of symptoms which are commonly known as Korsakow's syndrome. They consist of (1) mental confusion, with disorientation for time and place; (2) inability to grasp new impressions; (3) therefrom resulting loss of memory for the recent past and (4) tendency to make up this antrgrade amnesia with tales and pseudo-reminiscences. Most text-books on psychiatry gives a hopeful prognosis in this affection but a fairly large number of the cases remain crippled, both mentally and physically. Even those who do get well carry a

damaged memory, are extremely forgetful and do not regain their former efficiency.

Another manifestation in chronic inebriety is "Alcoholic Stupor." This closely resembles serous meningitis and is with difficulty differentiated. There is generally marked somnolence, clouding of consciousness, muscular weakness with spasticity so that either the patient is unable to locomote or is decidedly ataxic. At times the vision fails and there may even be optic atrophy. The attack usually lasts from a few weeks to a few months and tends towards recovery, providing total abstinence can be enforced. A few cases may go into blindness and dementia.

Chronic alcoholism gives rise at times to a symptom-complex that closely simulates dementia paralytica and is known as "Pseudo-paralysis." Mental hebetude, fantastic ideas, bizarre conduct, supplemented by tremors, unsteady gait, increased reflexes, unequal and fixed pupils, stumbling speech with paraphasia and paragraphia and occasionally attacks of syncope are symptoms commonly observed in both conditions. Pseudo-paralysis is not an altogether hopeless disorder and at the end of several months may terminate in recovery, although some of the spinal symptoms may persist.

The differential diagnosis is to be mainly based on the presence or absence of lymphacytosis in the cerebro-spinal fluid.

In chronic inebriety there occur sometimes states of transient subconsciousness, similar to those observed in epilepsy, during which journeys may be undertaken, crimes committed, but of which no recollection is retained by the patient on regaining his lucidity.

True epilepsy is said to develop in about seven per cent. of alcoholics, past the middle age, and in all essentials resembles the parent disease.

Lastly, we have to refer to states of anxiety, usually of short duration, which are characterized with morbid depression, fear and a sense of impending evil as seen in the true forms of anxiety neurosis.

To sum up: alcoholic insanity may manifest itself in pathological intoxication, delirium tremens, acute hallucinosis, polyneuritic psychosis, alcoholic stupor, pseudo-paresis, transient states of subconsciousness, epilepsy, anxiety neurosis and eventually in dementia.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
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(Continued from May Annals, page 357)

CHAPTER IX.

Soon after Ruth's return to the sick ward, she received a visit from one of her sisters, who was accompanied by her husband and child. Ruth's friends had come determined to do all in their power to break the spell which bound their unfortunate sister. The doctor allowed them to visit her in her room, that she might be under less restraint. She did not open her eyes, even when she recognized their voices, although she treasured every word that they spoke.

"Ruth," said her sister, "won't you speak to me? We are all feeling so badly about you. We have had a great deal of trouble since you came to the hospital. Brother Henry has buried three of his children, and sister Emma's children are left all alone. Mary's health is very poor, and we need you so much, Ruth. Your husband and children need you. We shall visit them before we go home. What shall I tell them for you?"

The tears flowed freely down Ruth's pale cheeks, but her tongue refused to utter the words that her heart would have spoken.

"Come, mamma," said the child, "I want to go; I don't like to stay here." "You will stay with poor Auntie, won't you dear?" his mother answered. "No," said the little fellow, "I don't want her for my Auntie. She's naughty, for she shuts her eyes and don't say anything."

"Hush! hush! child. Auntie is sick." Whispering to her

husband to remain with Ruth, the sister left the room with her child.

"Ruth," said her brother, "you will not let us go away, without speaking to us, will you? Don't you remember the pleasant times we used to have when we were all together?"

Ruth remembered. No incident in her life was forgotten, and this brother had been her friend. His voice sounded true and kind; but she could not speak aloud. She felt sure that he heard her silent talking, although he seemed not to hear.

"Well," said the doctor, entering the room, "Has Mrs. Campbell been talking with you?"

"I am very sorry to say that she has not," replied Ruth's brother; "I was in hopes she would speak to us. She used to be such good company, always cheerful; She had a great many friends."

After they were gone, Ruth thought over, and weighed every word they had spoken. "Three of Henry's children dead. That is well, for they are safe and happy." Death seemed to Ruth the greatest blessing that could come to mortals. "Emma's children are left alone." She knew how sad a thing it was to be alone. "How much better," she thought, "if they too had died."

Ruth's friends came and went. It was as though she had been taken from a bright, beautiful world and placed in one, dark and gloomy, while occasionally, messengers were sent from the bright world to remind her of what she had lost.

Was it strange, when night came and Ruth was bound, hand and foot, in bed, and when the slowly passing hours brought no sleep to rest her tired brain and to drown for a while her sorrows, that she should give vent to her misery in piercing screams?

The night-watch came and tried to give her chloral, but she did not swallow enough to quiet her. Later the door of her room was opened, and two young women entered, dressed in night-robes. One carried a lantern, and both carried brooms!

"Stop that noise, Ruth Campbell," said one, "you are keeping every one in the hall awake; We are going to pound you with these brooms, until you stop screaming."

Ruth wished they would pound her until they killed her. They struck her upon her arms, which were folded across her breast, and confined in the camisole which she wore. She wished they

would strike her head. When, from exhaustion, Ruth became quiet, they left the room, saying: "If you are noisy, we shall come again."

It was not the blows that hurt Ruth, although her arms bore marks of the beating for weeks.

The useful broom has been ceded to women as a weapon of defense, and without doubt it has won the day in many a well fought battle; but as a sedative or opiate, it will hardly become popular.

It would be strange, if, among the large number of attendants necessary, to care for the patients in such an institution, there were not, sometimes, those who were unkind. In this hospital, it was certainly the exception and not the rule. The superintendent was the right man for the place, and greater praise cannot be given him; for none but a good and wise man could acceptably fill the position. His assistants, whether physicians, matron, supervisors, or attendants, were chosen with reference to the best good of the patients. If the patients were unreasonable, they were not responsible; and, although firmness and restraint were very necessary, they must be treated kindly and with respect.

So well was this rule of the good doctor's understood, that those who found themselves detected in breaking it, generally proceeded to pack their trunks, without waiting for orders; and yet the kindness which prevailed was not so much owing to Dr. Hale's example and strict rule as to the humanity which begets tenderness and sympathy for suffering.

No class of people are so misunderstood as the insane; perhaps because no two cases are alike, as well as from the fact that those who have care over them have not suffered in the same way.

Certainly, our best men are needed in institutions where the inmates are not able to defend themselves; not always because they have not the reasoning power to do so, but because, although they may be insane upon one point only, their word will not be taken as evidence. They may be violent or passive in the hands of those who have charge of them. In their delusions, they have strange motives for their actions, and what is wrong may seem to them right, and the right, wrong. Small is the soul that dares to take unfair advantage of irresponsible beings. There are wolves in sheep's clothing in all places. No bars can shut

them in or keep them out, because they seem what they are not. There is a record kept, and sometime we, each, shall read our own, and in "the light of God's pure countenance," the best will read but poorly.

The passing weeks brought the third winter of Ruth's stay in the hospital. It was a time of sorrowful, silent suffering for her. Sitting so still all day, her feet, for want of circulation, were often icy cold, and they became purple and sore with chilblains. They did not trouble her much through the day, but after she was in bed, covered with the blankets, they would grow warmer, and then the itching and pain was hard to bear,—all the worse because they were tied to the foot of the bed, and she could not reach them with her hands. It seemed to her that there were hundreds of needles pricking them. She did not know what caused the pain, but was sure the doctors had found a cruel way to cause her suffering.

Ruth got an idea from a conversation that she overheard one night when she was being tied in bed. Said one attendant to another: "I don't see the need of binding this poor woman's feet to the bed. It seems cruel."

"She is suicidal," replied her companion, "and she might strike her head on the bed, if she could reach it."

"Well, I don't believe she would. Let's not tie them quite so closely," and, on kindly thought intent, she left the straps quite loose.

Left alone, Ruth pondered upon what she had heard. Tied in bed every night for all these years, and she had not known before why they had tied her feet. She thought a little more kindly of the doctors; for, after all, they had not done it to cause her suffering. She next proceeded to act upon the suggestion which she had received. By trying hard, she could just hit her head against the iron rail of the bed; but she could not do herself serious injury.

Dr. Hale was not unmindful of the suffering of those under his care. Ruth was not the only patient who was kept in restraint at night. The doctor decided to place the suicidal patients in a ward by themselves where they could be watched continually. Adjoining one of the halls in the upper part of the building was a large and very pleasant room, out of which opened two dormitories; the larger one containing twelve beds, and the smaller one, four. From the windows, could be seen

the city in the distance; the cars coming and going; and the beautiful waters of the lake; while nearer, were the orchards and farm house belonging to the hospital. The sitting room was furnished with lounges and easy chairs; pictures hung upon the walls; birds sang in the windows; upon the table were books, papers and games for the use of the inmates.

Ruth was among the number who were removed to this room. An attendant was placed in charge, and given strict orders never to leave the room, unless some responsible person was left in her place. Through the night the gas burned brightly, and a woman kept constant watch over the patients. Thanks to the good doctor, there were no more strait jackets for Ruth. If she could not sleep, she could at least turn in bed and rest her aching limbs.

CHAPTER X.

"And doesn't she eat or sleep or do anything at all?" said a cheerful, young Irish woman to the attendant, the first evening of Ruth's stay in the sitting room.

"I presume she sleeps sometimes because she can't help it; but from what I hear, that is about all she does do," was the reply. "I suppose the next thing is to undress her and put her in bed."

"It's Maggie O'Neil that will be doing that. It's hard enough getting along in this world, for the like of us that can fight our own battles, and it's myself that will take care of her."

"Come now," continued Maggie, and taking Ruth by the arm, she led her to the side of the bed in which she was to sleep. When Ruth was in bed, Maggie, after adjusting the bed clothes, stooped and kissed her forehead. That kiss was a benediction. Ruth's heart went out to her new found friend, and she almost feared to sleep, lest she should wake and find she had dreamed.

Maggie was herself, a patient. She was a wife and mother; but, in some way, life had gone wrong, and, losing courage she had become despondent; but she was much better now, and expecting soon to go home.

Ruth slept less than usual that night. She had worn the restraint so long that she almost missed it.

Toward morning, she slept, waking when the attendants came in at six o'clock to relieve the night-watch. A busy time fol-

lowed; some of the patients dressing themselves, while others required help. Maggie, who slept in the same room with Ruth, quickly completed her own toilet, and was ready to assist her less fortunate neighbor. Helping Ruth to rise, she dressed her and led her to a chair; then, bringing water, towels, and brush, she bathed her face and hands, and, after smoothing her hair, surveyed her charge in a satisfied manner, saying: "I'm sure you would look as well as any of us, if you would keep your eyes open, and chirk up a bit."

The sitting room patients were not allowed to go to the dining room to their meals, because they must not have knives and forks. Their food was brought to them upon plates, and eaten with spoons, while they drank their coffee and tea from earthen mugs. There was no stint of food, and it was good and wholesome. Ruth's refusal to eat, was at first, a subject for comment; but the patients soon accustom themselves to the peculiarities of those around them, and, after being in the place awhile, are not easily surprised at what they may see.

I wish to introduce my readers to some of the inmates of the sitting room at the time of Ruth's entrance there. They were from different ranks in life and of different nationalities, a company, that, outside the hospital, would hardly have associated together; but here, a common sorrow made them near akin, and they were usually friendly. Here, the rich and the poor met together and learned more fully than they could elsewhere, the meaning of the words, "The Lord is the maker of us all."

Here is Katie Paine, sitting always in the same corner. Her name seems fitting, for she is a chronic sufferer from asthma. Breathing with the greatest difficulty, she is worn almost to a shadow. She is twenty-seven years of age, a married woman and the mother of six children. She chatters to herself most of the time, often "stepping into Jordan and Marsh's to buy herself the making of two new dresses," sometimes asking, "would you have a black silk, or a brown one? and how many yards do you think it will take?" Her husband, Patrick, sometimes visits her; and he brings her cake and fruit, of which she gives away the larger share, saying cheerfully, "Pat is coming again in two weeks to take me home." She tells the same story week after week, and always keeps her faith in Pat.

On the opposite side of the room sits Johanna, a woman of quite a different type. She is rather surly; but she does not

meddle with others, except when Katie gets wilder than usual and denounces not only Johanna's native town but the people therein, using not very refined language; then she sends a slipper flying through the air toward Katie's head.

Mrs. Griggs is quite a prominent character in her own estimation, and she certainly is, in size. She is the picture of health, but will tell you in a pathetic tone, that she is very feeble. She prides herself upon her high connection; also, upon having been an inmate of a hospital, which she considers far superior to this. The doctors, there, had recognized her superiority, and had shown her many favors.

Nora Fontaine does her part toward keeping those around her cheerful, although she sometimes tells the sad story of her life. Married at fifteen, an intemperate husband, poverty, suffering, and the consequent train of evils; the recital of which brings the tears to her eyes; but the next moment she is waltzing around the room to the music of some lively gospel hymn, which she learned when she belonged to the Salvation Army.

One has only to hear Mrs. Simson speak to know that she is a lady of culture and refinement. No words leave her lips that are not well rounded, and perfectly grammatical. She keeps herself somewhat aloof from those around her and never talks of her trouble, whatever it is.

The lady of middle age who sits upon the lounge is Mrs. Minot. She wins love and respect from all. Her mind is very clear, her trouble being a nervous affection. She passed several years of her life in the family of one of our most gifted literary men, and takes great pleasure in telling of his beautiful home life.

Mrs. Willard is a busy little woman, always quick to do whatever her active brain suggests, but never the thing you most wish her to do. Just now she is distributing among her friends, some bright woolen yarn, which, she says, will make nice pin-cushions; she obtained it by unraveling some worsted lace torn from her skirt.

One woman has her hands confined in a leather muff, because she tears her clothing.

Mrs. Doane is busily engaged sewing. She is a nice looking woman, but very sad. She does not speak, unless asked a direct question, when she answers by yes or no.

Ruth soon had the names and peculiarities of each patient

learned, although she took no pains to do so. She grew to feel, more and more, that most of those around her were sufferers like herself, and it was well that she did; for, when our hearts are touched with sympathy for others, we do not think so much of our own troubles.

The attendants on the ward, each in turn, cared for the sitting room patients a week at a time. Often in the afternoon, a girl from the ward came in to spend a leisure hour. Two of the attendants were making ready for the great event of their lives; and, as Ruth's chair was near the window where they sat, their low-spoken consultations often reached her ears. Good, sensible girls were they. There were to be plenty of sheets and pillow slips, table linen and towels. Packages of samples were discussed and laid aside to do duty in sofa cushions some time in the future. Portions of letters were read, the parts omitted being easily supplied; for we do not lose the romance of our lives.

In some respects, Ruth was like a phonograph. She received and treasured what she heard, without volition. When and by whom shall the electric current be applied, that shall bid her remember and speak?

One morning, a supervisor entered the sitting room and said to the attendant, "You are to take Mrs. Campbell to the chapel. The doctor wishes to see her there, and I will let you know when he is ready."

Ruth waited for two hours in fear and trembling, the patients near her, wondering what was to happen. Nora settled the question by saying, "I know just what they will do. They will cut her head open and take out her brains; for that is what they do, when a patient is crazy and can't get well. You see they don't suffer after that."

Ruth, very unreasonably refused to be comforted by this assurance. When she was led from the room, she walked with closed eyes. Doors were opened and shut. She was led into the chapel and seated on a chair. Some one near her seemed to be addressing an audience; but she was so bewildered that she did not hear what they said. She almost expected to feel a knife upon her head, when the doctor opened her mouth, and, running a feeding tube down her throat, he poured through it, food into her stomach, at the same time explaining the manner of feeding patients who refused to eat.

Ruth was led back to the sitting room, and during the time, she had not opened her eyes. The next day she heard the ward doctor say to some one with whom he was conversing. "Did you know that Ruth was fed in the chapel yesterday?"

"So I heard. You were there, I presume."

"Certainly. There was about sixty doctors present."

"Quite an entertainment, but it seemed almost too bad."

"It was done for the benefit of the Medical Society, some of the members having never seen a feeding tube used. We intended to take a patient from the other side, but he had a violent spell, and so we took Ruth. She is always quiet, and, you know, she does not take notice of what is going on."

CHAPTER XI.

The dining room in ward four was in a commotion. Dinner was over and, according to custom, the knives and forks had been counted before the patients left the room. This time, a knife was missing, and it must be found. Each patient, as well as every part of the room, had been thoroughly searched; but the knife had not been found. The attendants look very anxious. Had one of them, carelessly, allowed it to be carried into the sitting room? If so, it might cost one, or all of them their places, if it did not result in more serious harm.

They consulted together, and decided to search the sitting room. This was no easy task, as the two dormitories afforded many hiding places for so small an article. They questioned the patients, hoping to get some clew. For a while, Katie did not notice what was going on, but chattered to herself as usual. Suddenly she seemed to take in the situation, and looking up asked: "Is it the knife that was on the waiter, you are looking for?"

"Why, Katie! Did you see a knife on the waiter?"

"To be sure I did."

"Where is it now?"

"I don't know. You don't think I'd be keeping it, do you?"

"No, Katie, you would not wish to make us trouble, I am sure."

"Is it troubled you are? Don't be fretting about it, for a knife don't cost much."

"This one may cost us a great deal; for we shall be dis-

charged, if we do not find it. Knives are not allowed in this room."

"Well, I'm sure I'm sorry," and Katie relapsed into her own troubles, and forgot her neighbors.

The search went on, Nora taking such lively interest in it, that she was not suspected. When she saw one of the girls crying, it was more than her impulsive nature could bear. "There now, don't cry and I'll find it for you." With a light laugh, she drew the knife from her stocking and gave it to one of the girls.

"Why, Nora Fontaine! You bad, bad woman, to cause us so much trouble, when we have been so kind to you."

"Yes," said Nora, "you have been kind to me, and that is why I gave up the knife. I wouldn't have helped you find it, if it had not been for that." Order was soon restored and the girls hurried back to work, very thankful that the affair had taken so favorable a turn.

The passing weeks made months of Ruth's stay in the sitting room. There seemed to be no improvement in her condition. Some of her old delusions, had, perhaps, given place to new ones. She could see faces everywhere. If a handkerchief or an article of clothing was thrown down, ever so carelessly, faces were sure to be outlined. She could see them upon the wall, the windows, in the water, wherever she looked,—faces, always faces. There were sad ones and smiling, beautiful and hideous, mocking and grotesque faces, staring at her, until she would close her eyes to shut them out.

Sometimes newspapers would be thrown down near her, and they strengthened the delusion that her thoughts were heard; for they seemed to her disordered brain, to be printed in strange, disconnected sentences, unlike newspapers as she remembered them. She believed her thoughts were printed in the papers, and, sometimes, driven to desperation she would rave wildly, and fearful thoughts would chase each other through her brain. It was an internal warfare. Outwardly she was calm and quiet, sitting with clasped hands, showing no sign of the tumult within.

Ruth overheard a conversation, by which she learned that a man, named Garfield, had been murdered. The assassin's name was Guiteau. She had not heard of them before, and did not know they were speaking of the president. A few weeks later, a woman, called Mrs. Garfield, was brought into the sitting

room. She walked the floor, most of the time, seeming in great distress of mind, and Ruth concluded that she was the wife of the murdered man.

Mrs. Stuart, a quiet, ladylike woman, was a newcomer in the sitting room. She stood by the window most of the time, usually holding a book in her hand. She spoke kind words, in low, sweet tones, and no one heard, but Ruth and the angels. Kind words! Perhaps they were the links needed to save.

The doctor entered the room one morning, and said to the attendant, "What is that hanging by a string from one of your windows? It has caught on the telephone wire."

Looking from the window, the girl exclaimed: "Oh! Mrs. Stuart has been writing to Governor Butler again."

After quite an effort, the missive was released from its lodging place. "Mrs. Stuart," said the doctor, "It is strange that you persist in doing this. Hereafter,—you must hand your letters to me, unless you prefer to place them in the private letter box and to have the trustees attend to them."

"I have tried both ways," replied Mrs. Stuart, "and I do not think my letters leave the building."

"Why do you think that?"

"Because I receive no answers to them."

"Did it ever occur to you, Mrs. Stuart, that Governor Butler has a great deal of business to attend to, and that he may not have time to devote to a correspondence with you?"

"I know that he makes it a part of his business, to help those who are in trouble, and I feel sure that he will help me, if I can be allowed to lay my case before him," said Mrs. Stuart earnestly.

"Well, perhaps you will have a chance, for the governor comes here sometimes. By the way, Maggie; we intend taking some of the patients to hear Sankey sing this evening, would you like to go?"

"Thank you, doctor," replied Maggie, "I should enjoy it very much, I am sure;—but what time shall we get back?" she asked.

"Not before ten o'clock, certainly."

"Then I think I won't go," said Maggie, "for I shouldn't be here to put Ruth in bed."

"Couldn't you trust that to an attendant for this one time?" asked the doctor, with a smile.

"Yes, but then, I like to know that she is comfortable like."

"That is very kind of you, Maggie, but I shall insist upon your going to the concert, for I think it will do you good."

When Maggie returned that evening, she went directly to Ruth's bed to see if the attendants had been faithful in the discharge of their duty.

Not long after, Ruth heard that Maggie was going away. Her brother was coming for her. Ruth felt that Maggie was her one, true friend. How could she bear to have her go away? The thought made her heart ache. The day came, and Maggie dressed for her journey, went around the room bidding her friends good bye. Taking Ruth's hands in hers, she kissed her saying: "Good bye, poor Ruth. I hope they will be kind to you. I have done what I could."

Ruth was long unused to tears; but now the fountain was stirred, and, to the astonishment of all, she burst into uncontrollable weeping.

"Why! the poor soul is crying. I believe she knows that I am going away, and feels badly about it," and Maggie cried in sympathy.

The attendant hurried her away to avoid excitement. Faithful Maggie: Always ready with kind heart and helping hand. She did what she could.

(To be continued)

Editorial

Mrs. Horsfall had one virtue—orders received from Mac Turk she obeyed to the letter. The ten commandments were less binding in her eyes than her surgeon's dictum. In other respects she was no woman, but a dragon. Hortense Moore fell effaced before her; Mrs. Yorke withdrew—crushed; yet both these women were personages of some dignity in their own estimation, and of some bulk in the estimation of others. Perfectly cowed by the breadth, the height, the bone, and the brawn of Mrs. Horsfall, they retreated to the back parlor. She, for her part, sat upstairs when she liked, and downstairs when she preferred it. She took her dram three times a day, and her pipe of tobacco four times.

Shirley.

CHARLOTTE BRONTE.

Following its custom, the ANNALS directs attention to the annual report of the Albany Guild as a charitable institution deserving the greatest commendation. The report of ninety-three pages which has just been issued will be read very generally by the citizens of Albany, but the peculiar and far reaching work of the Guild is of such special medical interest as to deserve the attention and study of medical men and others interested in the philanthropic aspects of the care of the sick in all cities.

Under a central administration, with standing committees, the Guild is able to reach and assist sick people in their homes, and to provide for them proper nursing at a moderate expense, or, when necessary, on a charitable basis. The principle upon which the Guild is operated is that of district nursing. Seven hospital graduate nurses visit throughout the city, and under their direction assistant nurses who are in training for high grade domestic service, remain in attendance upon the patient. The assistant nurses thus gain instruction which is emphasized by lectures given by physicians of the city. In the present report of the Guild are given the names of seven certified nurses who are now competent to care for the sick, and whose scale of charges is less than that of the hospital trained nurses.

In 1897 the Guild established a limited means department which was undertaken at the request of physicians who felt the need of professional nursing for people who cannot pay the regular rates for the services of graduate nurses.

In 1902 a dental department was established, and the voluntary work of the several dentists who constitute the staff has proved a great benefit, especially in the care of the teeth of children.

The special obstetrical department serves the double purpose of providing skilled care in the homes of the poor, and of furnishing practical instruction for the students of the Albany Medical College. There has been a steady increase in the number of patients seeking the ministrations of this department.

During the past year the prophylaxis and treatment of tuberculosis have received the attention of the Guild, and this special department has now in hand the management of tuberculous patients in their homes, after the plan of Dr. Pratt's successful administration in Boston. The tuberculosis problem has been agitated in Albany by the popular meeting under the auspices of

the State Charities Association, and the resources of the Guild have made easy the application of the principles of the treatment now so widely advocated.

Another feature of the Guild is the diet kitchen, which provides proper and scientifically prepared food for the sick. It is now proposed to extend this department so that milk for infant feeding may be distributed to the poor.

The ladies who have guided the development of the Guild to its present high standard of efficiency are to be congratulated upon the excellent results and the far reaching influence of this most practical of all of Albany's charities.

Little Biographies and the Eponymic Diseases

XXIX. LUTHER VOSE BELL

(1806-1862.)

Somerville, Massachusetts, Alienist and Surgeon of the Civil War.

HE was born in Chester, New Hampshire, December 30, 1806; son of Samuel Bell, who filled the offices of Chief Justice of New Hampshire, Governor, and United States Senator; descendant of Scotch-Irish stock who settled the town of Londonderry.

He entered Bowdoin College when twelve years of age and graduated in 1823. He received his medical degree at Dartmouth College in 1826 and afterwards pursued his medical studies in Europe. The degree of LL.D. was conferred upon him by King's College, Nova Scotia, in 1844, and by Amherst College in 1855.

He began practice as physician and surgeon in the towns of Brunswick and Derry, New Hampshire. In 1834 he gained the Boylston Prize Medal for a dissertation on the dietetic regimen best fitted for the inhabitants of New England. In the following year he published an essay on the *External Exploration of Diseases* in the ninth volume of the Library of Practical Medicine. He subsequently issued a small volume entitled *An Attempt to Investigate Some Obscure and Undecided Doctrines in Relation to Smallpox and Varioliform Diseases*.

About this time, influenced by the success that had attended

the establishment of the State Lunatic Hospital at Worcester, Massachusetts, he sought to ameliorate the condition of the insane in New Hampshire. To that end he entered political life as a member of the General Court, placing himself at the head of a propaganda which led eventually to the establishment of the New Hampshire Asylum for the Insane. While attending his second session of the Legislature and still pressing that object, he was appointed, late in 1836, Physician and Superintendent of the McLean Asylum for the Insane, a department of the Massachusetts General Hospital, and entered upon his duties early in the next year. In 1845, yielding to the solicitation of the Trustees of the Butler Hospital for the Insane, at Providence, Rhode Island, an institution then in contemplation, the Trustees of the Massachusetts General Hospital gave him a leave of absence to visit hospitals and asylums in Europe that he might devise a plan which should embody the best known construction of that period. The Butler Hospital stands to-day as a monument to his taste and judgment. Subsequently he published a small volume entitled *The Practical Method of Ventilating Buildings, with an Appendix on Heating by Steam and Hot Water*, presented as the anniversary address before the Massachusetts Historical Society.

He was one of the founders, in 1844, of the Association of Medical Superintendents of American Institutions for the Insane, now the American Medico-Psychological Association. At a meeting of the Association of the Medical Superintendents of American Institutions for the Insane, held in May, 1849, he read a paper "*On a Form of Disease resembling some advanced stages of mania and fever, but so contradistinguished from any ordinarily observed or described combination of symptoms, as to render it probable that it may be an overlooked and hitherto unrecorded malady.*" This is the malady to which his own name has been given as "Bell's disease," which others have called typhomania, and upon his description and study of which much of his fame as an alienist rests.

He was frequently called as an expert in insanity in the courts. In 1850 he became a member of the Executive Council of Governor Briggs, serving for one year. While acting in this capacity he passed upon the famous case of Professor Webster of Harvard University, who was executed for the murder of Dr. George Parkman.

In 1856 he resigned the superintendency of the McLean Asylum, on account of ill health, to retire to private life in Charlestown, Massachusetts.

At the outbreak of the Civil War he was among the first to offer his services to the government. He enlisted as surgeon with the Eleventh Regiment of Massachusetts Volunteers but was soon promoted to the position of Brigade Surgeon to General Hooker's division on the Lower Potomac. He died in camp at Budd's Ferry, Maryland, suddenly, from pulmonary disease, February 11, 1862. Less than a month before his death he wrote to a friend: "'Sudley Church,' with its hundred wounded victims, will form a picture in my sick dreams so long as I live. I never have spent one night out of camp since I came into it, and a bed and myself have been practically strangers these seven months. Yet I never have had one beginning of a regret at my decision to devote what may be left of life and ability to the great cause. I have, as you know, four young, motherless children. Painful as it is to leave such a charge, even in the worthiest hands, I have forced myself into reconciliation by the reflection that the great issue under the stern arbitrament of arms is, whether or not our children are to have a country. My own health and strength have amazed me. I have recalled a hundred times your remark that 'a man's lungs were the strongest part of him.' It has so proved with me. Had I another page, I should run on with a narrative of my exploits on horseback, excursions, reviews, etc., which sometimes make me question whether, in the language of our 'spiritualistic' friends, I have not *left the form*; and certainly, I have entered on another *sphere*."

It has been said of Luther V. Bell that nature was lavish to him in physical as well as in mental gifts. He was much above the common stature, and the grace of his carriage was perhaps heightened by a certain negligence in his dress. "A thick growth of raven black hair literally swept across a brow of almost marble whiteness, beneath which were features which a Phidias might have left as his abiding model of the human face divine, if a native nobility of sentiment and a mind's full culture had been the ideas to be expressed."

[Memoir of Dr. Bell, *American Journal of Insanity*, Utica, October, 1854. *Ibid.* April, 1862. Association Reminiscences and Reflections, Andrew MacFarland, M. D. *Ibid.*, January, 1878.]

G. ALDER BLUMER.

Scientific Review

HODGKIN'S DISEASE.

Read before Bender Laboratory Club, April 4, 1908

A discussion of the recent literature of Hodgkin's disease begins logically with the work of Dorothy Reed (1) in 1902. Though the lesions described by Reed had really been recognized previously, no one had attempted to establish quite such a characteristic and definite pathological picture before. On the other hand, the work of Sternberg (2) published two or three years previously had done much to complicate rather than clear matters. Briefly some of Reed's conclusions from the study of eight cases were that the term Hodgkin's disease should be limited to designate a clinical and pathological entity, the main features of which are painless progressive glandular enlargements usually starting in the cervical regions without the blood changes of leucæmia; that the growth presents a specific histological picture, not a simple hyperplasia, but changes suggesting a chronic inflammatory process. This characteristic picture as Reed described it in the lymph nodes, is as follows: The earliest change consists in an increased vascularity of the node with proliferation of the reticular endothelium and of the cells of the germinal follicles. As the process advances the appearance changes and soon the normal structure of the gland is unrecognizable. The dilated lymph sinuses and the reticular spaces of the lymph follicles and cords become filled with proliferating lymphocytes and endothelial cells so that the determination between lymph sinuses and follicles is entirely lost. Giant cells, both uninuclear and multinuclear, derived from the endothelial cells, soon make their appearance and form one of the characteristic cell types of the lesions. Plasma cells are seen, often in moderate numbers and eosinophiles may be exceedingly numerous throughout the tissue. Gradually the reticulum thickens forming a meshwork of varying thickness. In later stages the connective tissue shows marked proliferation, starting often about the vessels and extending to cut the tissue into coarse lobules. As the connective tissue increases the different varieties of cells disappear until finally the extremely cellular tissue is converted into dense fibrous tissue showing in places hyaline degeneration. Large areas of necrosis may be found. The capsule of the

glands is not affected. The secondary growths in the various organs show practically the same picture as is seen in the lymph nodes except that the nodule is not surrounded by a capsule. The secondary nodules in the liver and spleen may grow into the walls of the blood vessels.

This, in brief, is the character of the lesion which Reed considered so characteristic. During 1903 Simmons (3) described the historical structure of the glands from nine cases, which from their clinical course were diagnosed as Hodgkin's disease. In all cases he found lesions in the glands exactly like those described by Reed. In the same year I (4) published a report of eight cases occurring at the Pennsylvania Hospital, the histological picture in the glands of which corresponded closely with the lesions just enumerated. Since that time we have had an opportunity of studying in all twenty cases. In many of these cases the glands were removed at operation, but since operation it has been possible to follow all but four of the cases, and unfortunately many of them to autopsy, since only one of the sixteen is living.

In the same year single cases were reported by Steinhilber (5), Hitchmann and Stross (6) and Schur (7) in all of which the histological picture agreed closely with Reed's descriptions. During 1904 quite a number of papers appeared upon the subject, the most important of which were those of Warnecke (8), Yamasaki (9) and Benda (10). Warnecke described quite accurately the histological picture in nine cases, all of which showed the lesions that we have already mentioned. Yamasaki's study included seven cases. The changes in the glands, he states, correspond exactly to those described by Reed. In two of his cases the tumors in the mediastinum were not composed of groups of solitary glands but were large tumor masses, one arising from the thymus, pushing their way into the neighboring tissues and organs. Benda's report of nine cases is simply a repetition of those already quoted, though he adds some new data. He found that in his cases the growth in the glands was not always confined to the capsule, but frequently extended beyond, pushing into the surrounding tissue, and in its growth forming a false capsule. The general picture he likens to a granuloma. It is needless to repeat these detailed reports, and we must let it suffice to say that the histological descriptions of the cases numbering in all

seventeen and reported by Ashoff (11), Falkenheim (12), Zupinger (13), Sherman & Gaylord (14), Ruffin (15) and Gibbons (16) are practically the same and all correspond closely to Reed's first report. I have found this histological picture quite constant in those cases which we have studied, though the macroscopic appearance of the tumors varied considerably. In the majority of instances the tumors were formed of isolated lymph nodes grouped together in smaller or larger masses. In one instance there was a large tumor in the superior mediastinum, almost surrounding the trachea and extending into the thyroid and thymus glands. The muscles of the neck were compressed but not adherent to the mass. In another case the same type of growth was found in the mediastinum. In still another case the iliac glands which were principally involved were firmly matted together into a rather dense mass, while along the abdominal aorta, where the glands were much smaller, they were well isolated and were not adherent. In a few cases we have found very large areas of necrosis in the glands.

We cannot leave this part of the subject without referring to the lymphamatus tumors of the parotid and lachrymal glands described first by Mickulitz (17) in 1892. Only two years ago Minelli (18) reported one such case and called attention to the possible relationship between these tumors and so-called pseudo-leucæmia. In two of the thirty cases which he collected from the literature a general glandular enlargement followed the parotid tumors. Minelli points out that these tumors arise in the small islands of lymphoid tissue situated in the parotid gland. The growth is dependent upon the increase in the lymphoid cells and the proliferation of endothelial cells. Giant cells were seen in moderate numbers and eosinophiles were found in abundance particularly about the margin of the tumors.

We may now consider the present position as regards the etiology of Hodgkin's disease. Since the publication of Reed's paper the popularity of Sternberg's idea regarding the tuberculous origin of the tumors has rapidly lost ground, and it is only necessary to sum up this side of the question very briefly. Of Reed's fatal cases one died of miliary tuberculosis. Inoculations of portions of the glands into animals gave negative results in two cases; in the third complicated by tuberculosis the animal developed tuberculosis. Simmons inoculated animals with material from five cases with negative results, Asnoff from five cases

with negative results, Yamasaki from two cases with negative results and Warnecke from four with negative results. I have inoculated rabbits, guinea pigs and monkeys with glands from six cases without obtaining tuberculosis. Benda found acid fast bacilli in sections from the glands in one of his cases but states that they were not tubercle bacilli. He as well as Ashoff, Yamasaki, Ribbert and Borst, Warnecke, Hitchmann and Stross and Falkenheim do not consider that tuberculosis plays any part in the etiology of the disease. Indeed Sternberg (19) has modified his own views considerably and stated in 1905 that the disease may be caused by various infections among which he numbers tuberculosis. Benda has considered the condition as an infectious granuloma, and Ashoff is inclined to uphold this opinion.

The inoculation experiments made upon the smaller laboratory animals have shown that it is impossible to transmit the disease to rabbits and guinea pigs, but with the idea that it might be possible, provided the condition were due to some infectious agent, to reproduce the disease in animals more nearly allied to man, I inoculated two *Macoleus* monkeys with glands from three cases of Hodgkin's disease. Following the inoculations which were made subcutaneously there was a transient general glandular enlargement, coming on two weeks after inoculation and lasting several months. The excised glands showed only a simple hyperplasia, which did not resemble the structure of the tumors seen in Hodgkin's disease in the human being.

Finally it is only necessary to mention the findings of White and Proescher (20). These authors claim to have found enormous numbers of spirochoetae in sections stained by the Levadite method of glands not only from cases of Hodgkin's disease, but from cases of lymphatic leucæmia and lymphosarcoma as well. As yet these findings have not been confirmed. I have stained sections for spirochoetae by the Levadite method from three cases of Hodgkin's disease but have been unable to find any structures which resembled in the least spiral organisms. We can only conclude that the etiology of this condition is entirely unknown. When we come to consider the classification of this condition we find that the question is quite as debatable as the etiology.

Let us first consider the hypothetical relationship which it bears to leucæmia. At one time there was much discussion as to the possible transformation of pseudo-leucæmia into leucæmia. Most of the older arguments were based upon a case described

by Mosler (21) in 1888 in which it was stated that the blood picture in that case of pseudo-leucæmia altered completely within a few weeks, a normal proportion and number of white cells giving place suddenly to a leucæmia. Ribbert (22) in 1904 considered that Hodgkin's disease was very closely related to leucæmia and believed that it was possible to have a disease start as pseudo-leucæmia and terminate as leucæmia. The recent classifications of leucæmia by Turck (23), Pappenheim (24), Sternberg (25) and Banti (26) all include a condition which they term pseudo-leucæmia. They define pseudo-leucæmia as a disease characterized by enlargement of lymph glands without the blood picture of leucæmia. The histological structure of the lymph glands and infiltrations in the liver and spleen, which may occur, are identical with those found in lymphatic leucæmia. Pinkus is the authority for the statements that the blood shows a relative lymphocytosis.

Whether this condition represents only one stage of a lymphatic leucæmia, an explanation, indeed, which both Banti and Klein (27) are inclined to give, or whether it is a distinct disease entity or a type of leucæmia, it is at present impossible to decide. We must, however, recognize that most of these authors, as well as Hoffman (28) and others, exclude from their classification the type of tumor which we have been discussing and which they consider as a different condition from what they term as true pseudo-leucæmia. Sternberg restricts the term Hodgkin's disease to the groups of cases which he described and which have been described since then as Hodgkin's disease. It is quite clear, I think, that he has included too much in the groups of pseudo-leucæmia. Most of the cases in the older literature which have been described under that term are probably cases of Hodgkin's disease as he limits the condition.

In this peculiar group of glandular enlargement which we may call Hodgkin's disease the blood picture is essentially different from that of lymphatic leucæmia. The reported cases demonstrate that there is usually a leucocytosis and that the greatest relative increase of cells is in the polymorphonuclear leucocytes and not in the lymphocytes. Thus in only 11 of 38 cases which I have collected from the recent literature were the leucocytes below 10,000. In twenty-one they were between 10,000 and 20,000 and in six they were above 20,000. In two-thirds of the cases the polymorphonuclear leucocytes formed over 70 per cent.

of the white cells. It is also of interest to note that occasionally there is a relative increase in the eosinophiles. In one of the cases at the Pennsylvania Hospital the eosinophiles numbered in one count 16 per cent and in two other cases they formed over 10 per cent. of the cells. Nowock (29) has also reported a case in which the eosinophiles amounted to 16.24 per cent.

A problem really much more difficult to deal with than the separation of Hodgkin's disease from leucæmia is the distinction between Hodgkin's disease and lymphosarcoma. We have seen that practically everyone who has worked with these tumors has described the same histological picture, and certainly in Germany and Italy a type of lymphatic enlargement is recognized in which the same histologic structure may be recognized, differing essentially from the appearance of lymph glands in lymphatic leucæmia and suggesting, as most of these writers have stated, an infectious granuloma. Again, from certain types of lymphosarcoma, such as those originally described by Kundrat (30) and recently by MacCallum (31), the tumors in Hodgkin's disease are quite as readily differentiated as from lymphatic leucæmia and tuberculosis. If now we consider only those tumors which have the histological structure already described, we find that their method of growth is not always the same. Benda draws attention to the fact that the tumors are not always encapsulated; that when they start in the glands they may extend beyond the capsule and invade without actually infiltrating the neighboring structures. In two of Yamasaki's cases, already referred to, the tumors grew in much the same way as a sarcoma, in one case invading the lung; and he is inclined to believe that there was a transformation in this case from Hodgkin's disease to sarcoma.

Gibbons has recently argued quite strongly for classifying Hodgkin's disease as a tumor, describing an invasion of the capsule of the gland with extension into the neighboring tissues. Banti has recently classified what he terms the poliliformatoses under three heading:

(I.) The infectious forms, which include tuberculosis and syphilis;

(II.) The neoplastic;

(III.) The fibro-cellular, which he terms Hodgkin's disease. This he believes is a granuloma due possibly to several different

agents, though he considers the possibility of its being a neoplasm.

From the evidence at hand it does not seem that we can go farther than this. It is impossible to classify the disease at present without definite knowledge as to its etiology.

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WARFIELD T. LONGCOPE.

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were 151 inspections made, of which 86 were old houses and 65 new houses. There were 34 iron drains laid, 9 connections to street sewers, 14 tile drains, 1 urinal, 28 cesspools, 149 wash basins, 52 sinks, 48 bath tubs, 33 wash trays, 2 butler's sinks, 144 tank closets, 16 slop hoppers, and 1 shower bath. There were 80 permits issued, of which 57 were for plumbing and 23 for building purposes. There were 37 plans submitted, of which 14 were of old buildings and 23 of new buildings. There were 12 houses tested on complaint, 1 with blue, red and 11 with peppermint and there were 20 water tests. 86 houses were examined on complaint and 64 were re-examined. 59 complaints were found to be valid and 27 without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid Fever.....	12	4	3	3	7
Scarlet Fever.....	29	7	18	10	97
Diphtheria and croup.....	13	2	10	47	21
Chickenpox.....	6	10	5	8	12
Measles.....	32	454	3	14	326
Consumption.....	0	3	1	38	56
Totals.....	92	480	40	120	519

Contagious Diseases in Relation to Public Schools.

	Reported		Deaths	
	D.	S. F.	D.	S. F.
Public School No. 2.....	1	..	..	..
Public School No. 3.....	1	3	..	1
Public School No. 4.....	1	2	..	..
Public School No. 5.....	2	4	..	..
Public School No. 6.....	..	1	..	..
Public School No. 7.....	1	..	..	..
Public School No. 8.....	..	2	..	1
Public School No. 11.....	..	2	..	..
Public School No. 12.....	..	1	..	..
Public School No. 14.....	..	12	..	..
Public School No. 15.....	..	1	..	..
Public School No. 17.....	..	2	..	..
Public School No. 21.....	..	1	..	..
Public School No. 22.....	..	1	..	..
Public School No. 24.....	..	1	..	..
Public School No. 25.....	..	2	..	..
Normal College.....	..	1	..	..
St. Joseph's Academy.....	..	2	..	..
Lady Help of Christians.....	..	1	..	..
Holy Cross School.....	..	1	..	..
St. Mary's School.....	1	1	..	..

Number of days quarantine for diphtheria:			
Longest.....	34	Shortest.....	10
		Average.....	24 4-7
Number of days quarantine for scarlet fever:			
Longest.....	56	Shortest.....	9
		Average.....	28 30-42
Fumigations:			
Houses.....	89	Rooms.....	256
Cases of diphtheria reported.....			21
Cases in which antitoxin was used.....			21
Cases in which antitoxin was not used.....			0
Deaths after use of antitoxin.....			5

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive.....	10	3	7	44	19
Initial Negative.....	46	17	45	84	90
Release Positive.....	14	5	32	110	44
Release Negative.....	21	0	18	257	56
Failed.....	0	0	0	26	5
Totals.....	91	25	102	521	214
Examination for tuberculosis:					
Initial Positive.....	....	....	....	10	11
Initial Negative.....	....	....	....	15	14

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	15
Factory certificates issued to children.....	10
Children's birth records on file.....	25
Number of written complaints of nuisances.....	54
Privy vaults.....	8
Plumbing.....	16
Other miscellaneous complaints.....	30
Total number of dead animals removed.....	586
Cases assigned to health physicians.....	159
Calls made.....	675

BUREAU OF MARKETS AND MILK.

Wagons and milk in clean condition.....	13
Wagons and milk in unclean condition.....	0
Ice on cans.....	0
Butter fats below 3%.....	0
Butter fats from 3 to 3.5%.....	5
Butter fats from 3.5 to 4%.....	7
Butter fats over 4%.....	1

Solids below 12%.....	3
Solids from 12 to 12.5%.....	5
Solids from 12.5 to 13%.....	4
Solids over 13%.....	1
Market re-inspections.....	123

BUREAU OF MILK.

No.	Specific Gravity	BUTTER FATS.					SOLIDS.		
		Under 3%	3 to 3.5%	3.5 to 4%	Over 4%	Under 12%	12 to 12.5%	12.5 to 13%	Over 13%
3...	33.1	..	..	I	..	..	..	I	..
12...	31.7	..	..	I	..	..	I	..	..
33...	31.6	..	..	I	..	..	I	..	..
40...	32.6	..	..	I	..	..	..	I	..
74...	32.1	..	..	I	..	..	I	..	..
83...	32.1	..	I	..	..	I	..	..	..
94...	31.6	..	..	I	..	..	..	I	..
170...	33.1	..	..	I	..	..	..	..	I
95...	32.6	..	I	..	..	I	..	..	..
108...	32.1	..	I	..	..	I	..	..	..
117...	32.1	..	I	..	..	..	I	..	..
147...	30.6	..	..	..	I	..	..	I	..
169...	32.6	..	I	..	..	..	I	..	..

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

A regular monthly meeting of the Medical Society of the County of Albany, was held Wednesday evening, March 18th, 1908. Meeting called to order by President Lempe at 8.45 o'clock.

The following members were present: Drs. Bedell, A. J. Beilby, Conway, Curtis, Douglas, W. H. George, Gutman, Hacker, Harrig, Keens, Lanahan, Lawyer, Le Brun, Lempe, Lomax, MacDonald, MacFarlane, Morrow, D. V. O'Leary, Jr., Pease, Pearce, Reynolds, Rooney, Root, Rulison, Sheldon, Traver, A. Vander Veer, Van Slyke, Ward, Winne.

Dr. WARD moved that the regular order of business be suspended. Motion seconded and carried.

JOEL E. GOLDTHWAIT, M. D., of Boston, Mass., then delivered a paper on "Our Present Understanding of the Non-Tuberculous Joint Diseases," in part, as follows:

That which I have to say to you to-night, gentlemen, is simply to try to show you something of our understanding of some of these diseases, termed in our subject the "non-tubercular joint diseases," not spending much time on those diseases in which there has been but little change to our knowledge in the past few years, but those in which there has been

the most change. There is not much new knowledge in regard to the etiology and treatment of the various kinds of rheumatism, the most marked change and the most definite advancement being in the class which probably represents the largest class of all—that which has been spoken of by numerous writers as the infectious arthritis. That micro-organisms are responsible for this type of joint disease there is no question in the minds of those who have given the subject careful study. The only question is whether one organism or many are responsible for the symptoms. Most of the observers, however, feel that any of the micro-organisms may produce joint symptoms. The same organism may produce acute symptoms, the so-called acute rheumatism, or produce chronic rheumatism, so that the terms “acute” and “chronic” rheumatism have very little significance except as they apply to the chronicity of the disease. One may have a bad case of infection, with joints involved, or a mild attack, the same organism producing both, the different conditions depending upon the virulence of the organisms or upon the resistance of the individual. The way in which the same organisms act is shown as follows: Not infrequently it starts in the body, is absorbed rapidly and produces joint symptoms. The infection under ordinary conditions is controlled in a very short time, leaving certain changes. At times these same organisms are not destroyed but are simply temporarily suppressed and the patient recovers only to have a repetition of the trouble a little later. One of the things which has been done in the past year has been to try to find the source of infection in these cases, as to how the organism gets in, where it comes from? Any mucous membrane may represent the source of infection—the throat, the structures about the teeth, the mucous membranes of the genito-urinary tract, or it may come directly from the skin. Therefore, the first thing should be not simply to relieve the pain—that is easily done—but to find where the infection is coming from and treat the cause rather than the result. When a patient has repeated attacks you can be perfectly assured that within that patient's body is a point—perhaps a very slight point of infection, and that the condition will go on till that point has been found. If that point can be found, the cure of that patient is perfectly easy, the joint symptoms can be controlled and the patient can be restored to perfect health. If you have a case in which there is marked pain, and if you have a joint which has been disorganized by this infection, the joint cannot be made normal. You will then have simply the amount of joint impairment of function as would be in keeping with the amount of damage done the joint in the original infection. The first thing in your treatment should be to subject your patient to a painstaking scrutiny, examining that patient from top to bottom, examining the throat and the excretory passages. Without doubt, the largest number of cases come through the medium of the throat and excretory passages. The cases coming through tonsil infection are not commonly the great big tonsil, but are the cases in which the tonsils have been sclerosed, so that you see in the throat the retracted tonsils, and in back of that scar frequently is a pocket containing purulent material, which when removed is followed by recovery. It may be the nose; it may be the excretory

passages about the throat and nose. If nothing is shown there, it means going through the genito-urinary tract. A patient was referred to me, who four years previous had had a very bad attack of grippe, followed by a very persistent case of bronchitis, and had a cough the like of which I never heard, which disturbed the hospital inmates. I finally discovered the source of the trouble, performed an operation and within twenty-four hours the patient stopped coughing. The patient had an infection about the passages of the nose. Another patient suffering from rheumatism was operated upon for a nasal condition, a polyp. Nothing was discovered by examination of the intestines or genito-urinary tract. This polyp was, therefore, removed and a short time after this patient, who formerly was compelled to use crutches, walked toward me without any assistance, without any noticeable limp, and not only that but he did a few steps to show the condition of his feet. Now, this was a case in which the polyp when removed was shown to be full of muco-purulent material, and in that instance was the source of infection. Abscesses of the teeth proved to be the source of the trouble in another case.

Dr. Goldthwait then spoke of the excellent results obtained by subjecting the rheumatism cases to the same treatment as the tuberculosis cases. It is astonishing how many of these patients who have been shut up so long improve.

If I stand for any length of time it follows that the joints of my spine are going to give out, and it is only a question of time before the sacro-iliac is going to give out, also my feet, arms, etc. It is impossible for some people to get out of a chair without assistance. In getting up the strain is put on the hands. The first thing that results is the flat feet, the arch breaks down, the articulation is displaced and you get a true displacement of that joint. This is true of the shoulders, the wrists, etc., and a number of cases which are supposed to be chronic rheumatism are cases of purely static strain. After describing the anatomy of the sacro-iliac joint, Dr. Goldthwait said that these joints were the most liable to strain. One reason why operations are unsatisfactory is because operation is only half the treatment. He then spoke of the delivery of children, and how affected by the position of the sacrum at the time. At every menstrual period there is a physiological relaxation of these joints, which explains why women should be less active at that time than at other times. Not only that but if there is any disturbance of the pelvic organs which results in any marked circulatory disturbance of the pelvic organs there is frequently a relaxation of the pelvic joints. He then spoke of deformities of the scapulae, which cause pain, commonly diagnosed as rheumatism.

Dr. Goldthwait then appealed to the physicians to bestow more care and time on chronic cases, saying that the neglect of them heretofore has been a reproach to the profession, which he characterized as the best profession. A chronic case represents one of the most satisfactory types that can be handled. Oftentimes they say to me that this is the first time that I have had any examination at all. If you will all do your part we will do ours and we will know more about these cases than we do at the present time.

Dr. VANDER VEER: It seems to me that Dr. Goldthwait has given such a very delightful, intelligent and practical lecture that it is deserving of some co-operation on our part. His reference to the pelvis was very fascinating; his reference to the patient with the deformed scapulae very impressive. Indeed the points that he has given in this direction will be of very great service to every one here present. He has come here to-night and made a demonstration it seems to me for which we ought to be very grateful. I hear men say, "If I had only graduated thirty years ago when there was something to learn." Here is a grand opportunity for those young men to solve the problems which have been put before us to-night. I move that a vote of thanks be tendered Dr. Goldthwait for coming here to-night and giving us such an enlightening and impressive address. Seconded and carried.

Dr. MORROW said it was one of the most illuminating addresses to which we have ever listened. Yet one thing occurs to me and that is in connection with the deformation of the scapulae. What permanent treatment can be devised for the permanent relief of this condition? I think a little further dissertation of this point would be interesting.

Dr. MACFARLANE spoke of his pleasure in listening to the delightful, scientific and attractive presentation of the subject which Dr. Goldthwait had given. It is certain to prove a stimulus to us. There is one thing that comes to my mind that I would like Dr. Goldthwait to shed some light upon, and that is backaches, which come with traumatic neuroses one of the most characteristic symptoms which neurotics have. I can imagine that nothing could be better for any man than to spend a week or two, or four weeks, under Dr. Goldthwait, and just see how he does his work.

Dr. CURTIS expressed his pleasure. He recalled a case of purpura hemorrhagica with joint symptoms and asked if the two were connected with germ infection?

Dr. MACDONALD: I think Dr. Goldthwait has presented to us to-night a number of ideas which are very instructive. There is no doubt that a great many conditions arise from obscure sources, such as the tonsil and other hidden sites, and that they are very patent in producing distinctive symptoms of disease in the bony system, and I think that it is important that we should fully appreciate that there might be a joint infection anywhere, whether in the spinal column or the knee, associated with tonsilitis. I think that in a general way that has been appreciated by many clinicians for a great number of years. Before a cure can be effected, it is necessary to root out the source of the trouble, whether it be in the tonsil or in the prostate. There is probably no more serious condition that comes to the attention of the general practitioner than gonorrheal rheumatism, and I do not know of any medicine to cure that infection. Until you make attack upon the fundamental focus of the disease, urethral stricture or any prostatic infection, there is little hope of a complete cure. This is equally true of other infections, as Dr. Goldthwait told us, and we have to approach a large number of these chronic infections from very much the same standpoint.

Dr. ROONEY commended the paper in the warmest terms. His message appeals to me very strongly, for the reason that it has thrown some light on a case which has puzzled me for the past year. I would ask his opinion in regard to patient of mine who has a pain in the region of the left scapula.

Dr. ROOT: I feel that a great deal has been said, but I feel that I cannot let this opportunity go by without expressing to Dr. Goldthwait my thanks for coming over here and giving this delightful lecture. Dr. Goldthwait has proved to us, as has already been mentioned by Dr. MacFarlane, that whatever may be our special lines the man who is thoroughly qualified in his specialty is the man who is also well qualified in every line of medicine; it is one and the same thing. The worst case of so-called rheumatic gripe that has ever been my fortune, or misfortune, to see, treated for weeks by most eminent physicians, came from the infection of one nostril. Dr. Goldthwait comes to us as an honest fellow; he does not say to us, "Send your patients to me if you want them treated." That is not his message. He comes to us and gives to us as best he can in the very limited time he has the very best thoughts in him, and I cannot allow this moment to pass without extending to Dr. Goldthwait my most sincere appreciation of what he has said to-night. In my mind I do not recall a single lecture that I have ever heard anywhere, at any time, upon any medical subject, that has covered the field as perfectly as Dr. Goldthwait has covered his to-night. It is simply inspiring.

Dr. LE BRUN spoke of a boy, nine years of age, who had been troubled with rheumatism for some little time. He was treated by his family physician for some time, with but very little result. The pain appeared to be principally in the neck and shoulders. I was asked to look at the child, found a polyp in his ear, which I removed. The child is now practically well.

Dr. WARD: I cannot recollect of ever having listened to so fascinating a paper in my life. My interest in this matter is particularly great just now, because in a family I have had over thirty years, is a young lady, now some thirty-two or thirty-three years old, of whom I have had professional charge in a general way. Some fifteen years ago she had the misfortune to fall and receive a severe shock to her spine and pelvis. After a long course of treatment under specialists in New York, she came home, with the firm conviction that nothing further could be done. She walked with difficulty, rose with difficulty and was practically confined to a sitting posture, and was regarded as a chronic invalid. She went to see Dr. Goldthwait several months ago and returned home Christmas, walking comparatively well, without the aid of a cane. This was due to Dr. Goldthwait's diagnosis, relaxation of the pelvic joints, and certainly his theory was undoubtedly correct. I must confess my entire surprise at the benefit she had received, yet when I think over the case, and in view of what Dr. Goldthwait has said, I can understand that a great many similar cases can be found and benefited by this method of treatment.

Dr. GOLDTHWAIT: I want to thank you very much for the pleasant things you have said. I am sure that if we will persevere a great many things that are now obscure will be cleared up in the future. The man who has interest in only special things is not much good. In regard to deformations of the scapulae, the thing we ought to do is to prevent these things from occurring. A great many of these deformities are due to the adjustment of the clothing and the weight of the same. Dr. Goldthwait then explained in detail the correct clothing to be worn, also its proper adjustment. By means of specimens Dr. Goldthwait showed how the deformed scapula rubs against the rib, causing pain. He then described the operation for removing the angle of the deformed scapula, taking off enough so that when the shoulders are brought back there is no point to stick into the ribs. It takes about a week for such an operation to heal, and at the end of the second week active motion is begun.

A great many traumatic neuroses are due to the "railroad" spine. He explained how a railroad collision affected the bony system, using models, and pointing out thereon the various parts affected.

Speaking of the sacro-iliac joint the principle is perfectly plain. The thing you want to do is to strengthen up your ligaments and muscles; you want to get more supports for your joints. If your bones are out of place put them in place. Dr. Goldthwait, with the assistance of models, pointed out and explained many other conditions and their causes.

Motion to adjourn made, seconded and carried.

ARTHUR J. BEDELL, *Secretary.*

GEORGE G. LEMPE, *President.*

A regular meeting of the Medical Society of the County of Albany was held at the University Club, Wednesday evening, April 22nd, 1908. Meeting called to order at 8.45 p. m., President Lempe in the chair.

The following members were present: Drs. Bedell, A. J., Blatner, Classen, Curtis, Davis, Douglas, Hacker, Herrick, Holding, Jenkins, Kreiger, Leavy, Lempe, Lomax, McHarg, Macdonald, MacFarlane, Mereness, Merrill, Meyers, Moore, C. H., Morrow, Nellis, G. W. Papen, Sr., Perry, Reynolds, Root, Rulison, Sampson, Sheldon, Skillicorn, Stevenson, Traver, Tucker, A. Vander Veer, E. A. Vander Veer, J. N. Vander Veer, Van Slyke, Wilson, Wiltse.

Dr. JENKINS moved that the minutes of the last meeting be adopted as approved by the individual members and as printed in the Medical Annals. Seconded and carried.

The names of the following candidates for membership were recommended for election: Dr. Agnes Elizabeth Page, Albany, N. Y.; Dr. Theodor David Dockstader, Ravena, N. Y.; Dr. C. W. Louis Hacker, Albany, N. Y.

Dr. JENKINS moved that the Secretary be authorized to cast one ballot for each of the above names.

The Secretary accordingly cast one ballot for each, and the President

thereupon declared Drs. Page, Dockstader and Hacker elected as members of the Society.

The Secretary read the resignation of Dr. Pearce, to take effect at the end of the fiscal year.

Dr. TUCKER moved that the resignation be accepted. Seconded and carried.

Dr. RAMON GUITERAS, of New York, then read a paper entitled "Diagnosis and Treatment of Renal Tuberculosis."

Dr. JAMES N. VANDER VEER then read a short abstract from his paper, entitled "Tuberculosis of the Bladder."

Dr. A. VANDER VEER moved that Dr. Rixford, of San Francisco, a member of the American Surgical Association, be requested to open the discussion. Seconded and carried.

Dr. RIXFORD: To be sure the tuberculous kidney sometimes falls into the hands of the general surgeon, but from the description of the difficulties of diagnosis, it is quite evident that the general surgeon shall have very little to do with the tuberculous kidney in the future. I suppose we have all had some experience with the tuberculous kidney and bladder. I am sure that it has been of great value to be here to-night and to have heard these two very excellent papers. It will take me a very long time to enumerate the many points that I gathered from the papers. I think, perhaps, that the only thing I could say would be to make one suggestion in regard to the future development of surgical tuberculosis that may be applied to the bladder and kidneys, as well as to tuberculous lesions elsewhere. We have in San Francisco a gentleman who has done a great deal in genito-urinary surgery, particularly in stone. Many, many years ago I remember his standing out strongly against his confreres, saying, "Let your tuberculous bladders alone." I think that later experience has shown the value of that teaching, and I am very glad to have Dr. Vander Veer emphasize it so strongly. The case is different, however, when the tuberculosis of the bladder has originated from a unilateral tuberculosis of the kidney. There your tuberculosis in a large proportion clear up if you remove the source of infection. And yet to remove a kidney is no small operation. The mortality, we have heard, is six, seven and eight per cent. among the experts; of course, much larger among the less experienced. It is indicated in cases where the tuberculosis is unilateral and the presence of a sound kidney on the other side. The percentage of bilateral tuberculosis varies from 3 to 60 per cent., according to the observer and the time when the examination is made. Does not all this suggest that perhaps there is a medical treatment also for tuberculosis of the kidney? Especially, may it not be possible in the beginning of a tuberculosis of the kidney to do something of great value for it medically? I might relate a case of tuberculosis of the bladder which I saw in association with my confrere, Dr. _____, of San Francisco, which taught us a very important lesson. It was a case with contraction bladder and extensive tuberculosis of the bladder. We were not able to determine whether it arose from tuberculous kidney or not.

The cystoscope showed tuberculous ulcers, and contrary to the teaching that Dr. Vander Veer has mentioned, drainage was made of the bladder, in order to relieve a number of very distressing symptoms. His tuberculosis was in no way bettered; the man was not pleased. He consulted another physician, and after some months the man returned perfectly well. The other physician had administered minute doses of Koch's Tuberculin. Is it not possible that in the beginning of these cases of tuberculosis, not merely of the bladder but of the kidney, that something may be expected from the proper use of tuberculin, combined with the other well-known hygienic measures? The trouble with tuberculin has been that it is used in altogether too large doses. The therapeutic dose, as we have learned from Dr. Wright and his work on the opsonins, is extremely small. We know that Dr. Trudeau and others have demonstrated the great value of the minute dose as contra-distinguished from the other doses of tuberculin.

Dr. J. N. VANDER VEER: On the way up Dr. Guiteras said that he hoped there would be lots of questions. I should like to ask him, having had much experience in cystoscopy, which I believe is being used more and more every day, how large he finds a bladder must be in the sense of holding a quantity of urine, in order to satisfactory cystoscopy it?

Dr. GUITERAS: From $2\frac{1}{2}$ ounces up to 5 ounces.

Dr. MACDONALD: I feel very much like discussing this paper from the general practitioner's point of view, as it seems to me that possibly there are some situations with relation to tuberculosis of the genito-urinary tract which are best observed by them. Now, I think that you will agree that in the presence of a chronic genito-urinary discharge, in the absence of gonorrheal trouble, taken together with the absence of instrumental handling of the genital apparatus, when these symptoms are insidious to a very great extent, there is a large probability that this is a case of tuberculosis of the genito-urinary tract. I mean that, of course, in contra-distinction to calculus, which has definite symptoms that may be separable from tuberculosis. We have been enabled to make, in the Albany Hospital, various clinical observations; first, from patients presenting for treatment who have never suffered from any genito-urinary disease of a venereal character; second, those who have never suffered catheterization and have had no instruments introduced into the bladder; third, those in whom the onset of the symptoms were irregular and obscure in type, and frequent urination, and that those symptoms, taken with the examination of the urine, enable us to make a positive diagnosis of tuberculosis of the genito-urinary tract. Now, another point to which I wish to call your attention: that tuberculosis of the kidney is an infection usually of the chronic type. Unilateral infection has occurred from a great many organisms; that is, acute infections of the kidney in a healthy genito-urinary apparatus coming through the blood from the colon bacillus, from the streptococcus and from other organisms. A source of tuberculosis of the kidney is hematogenous, in which the tuberculosis of the kidney is not secondary to any

process of the bladder or in any other part of the genito-urinary system, but is primary in the kidney itself. This is demonstrated in a large number of cases where single circulatory areas of the kidney supplied by portions of the renal artery have shown themselves to be the source of tubercular infection. Those cases are numerous enough, and when a diagnosis can be made, they are usually unilateral; and in those cases, it occurs to me that there is no plan of treatment so successful or so sure of cure as is an extirpation of that kidney. The general understanding is, that where it is accessible, where it can be reached and where it can be extirpated, tuberculosis is a surgical condition, and if we can extirpate the apices of tubercular lungs we will have gone a very long way towards the cure of pulmonary tuberculosis. I should like to say that I am yet to be satisfied that any microscopical examination of urine from patients who have passed from one physician to another, or by any of the differential methods of staining, to demonstrate tuberculosis. I think the smegma bacillus is not so easily differentiated under the microscope as many would have us believe; but, on the other hand, I am quite agreed with the pathologists when they say that animal experimentation, or inoculation of a guinea pig, is the method by which we are bound when we say definitely that you have tuberculosis, and is the method on which we must place our most definite conclusion. The others are not successful. For about twenty years I have occupied myself with the use of the cystoscope, and I have found that in a large number of cases of tuberculosis of the genito-urinary tract the cystoscope is very often unimportant and unsatisfactory, because of the contraction of the bladder, and when that does occur to any great extent it is practically impossible to so distend a tuberculous bladder. Catheterization of the ureters, for the very reason I have mentioned, is very often impossible. If you wish to do that, and it seems desirable, it can be accomplished more readily and more easily through a suprapubic exploratory incision of the bladder, and in some cases better success is obtained, and under some circumstances you are quite able to adopt lines of treatment which I am satisfied lead to more or less satisfactory results. Mention has not been made of the benefits to be derived from continuous irrigations of the bladder. I, personally, and other men, have had a considerable number of cases which have at least been very much benefited by the employment of this method of treatment, as mentioned by Dr. Kelly and others. I kept a patient in a bath tub for six months, with a permanent catheter in the urethra, irrigating the bladder six hours out of twenty-four. It is difficult for me to understand that the extirpation of the kidney, and even of the ureter, is such a serious operation. It has occurred to me from my observation that they try to remove the kidney out of a button-hole incision. I can see no reason why you should not get all the room you want by carrying the proper incision forward, which does not involve in any way the opening of the peritoneal cavity. Dr. Guiteras will tell you that the isolation of the ureter is not so difficult as might appear, and particularly so if it is involved in a tuberculous process; that there is usually along the ureter a line of edema which leads directly to it, and that by the simple application of the

clamp and with the forceps to reach the renal branch of the artery and allow him to strip the vessel from the ureter and isolate the other branches of the renal artery or its main trunk above, and all the vessels can be ligated and you have simply the kidney and ureter entirely in your hands and can ligate them.

Dr. WILTSE: I have been very much interested in these excellent papers which have covered the ground so fully; there is not much left to be said. I think it is well established that tuberculosis may occur primarily in the kidney, if it has not occurred secondary to tuberculosis in other parts, and it has seemed to me in some of the cases which I have seen that the initial lesion has been due to traumatism; that is to say, some small lesion eventually becoming infected by the tubercle bacilli. I have in mind a case of a man forty-five years of age who received a traumatic injury to the testicle, the testicle remaining permanently damaged, and then later in life having repeated attacks of renal colic and passing kidney stones of good-sized dimensions, with a good deal of pain and tenesmus. Within the past three or four years tuberculosis developed, apparently in the vesicles first, and then following down the cord to the testicle. Repeated microscopical examinations by experienced men were negative. Therefore, it seems to me that the only positive way of making diagnosis is by inoculation of guinea pigs, as has been suggested. I thoroughly agree with the gentlemen on the treatment of tuberculosis of the bladder, but I believe that in a great many cases surgery does not cure, that many cases go on after operation not much better than before operation and die equally as early as if they had been left to themselves.

Dr. VANDER VEER: In moving a vote of thanks to Dr. Guiteras, I wish to say that he has presented some points that for many years I have carried the instructions that came to myself from personal experience. The condition of polyuria present in the early cases of the kidney developing tuberculosis rests largely with the differential diagnosis, must rest largely with the general practitioner; and when he has eliminated the possibility of Bright's disease he has then to exercise his greatest skill to reach an accurate diagnosis. After speaking of the benefits derived from the use of the cystoscope in the examination of the bladder, Dr. Vander Veer said that he had at last reached the conclusion, as stated here to-night, that none of our pathologists are at all certain in finding bacilli in the urine. A young man had been sent to me after suffering three years from a bladder trouble. We made a careful examination, and the urine examined but the bacilli not found. Guinea pig experimentation resulted in one pig dying of tuberculosis, and the other pig had tuberculosis. Exposure of the kidney showed it to be tubercular and I removed it, and the patient has been well since. The guinea pig cleared up that case. It takes a little time to make the test, and if this unfortunate vivisection bill now before the legislature becomes a law we must get a permit to carry out this work. You know very well what is to be the result—delay will be greater than at the present time. Dr. Guiteras has given us some very excellent points. I can only say this:

in the removal of the kidney, in the separation of the ureter and so on, I believe in removing every portion of the ureter that you possibly can and get down just as near the bladder as you possibly can. As to the use of the ligature, by all means use it. But when you get that exceedingly short pedicle, when the kidney is tied up, as it were, when it is difficult to lift it out, I have found that the clamp was a most excellent method, no hemorrhage following the removal of it. Do not have it too long, nor have it extend out from the incision any more than is absolutely necessary. I have not seen any unpleasant results from its use, so I believe that is an instrument we should use. I find that in many cases we can relieve the condition of chronic cystitis. I have done the operation, both in the male and female of draining the bladder, and when that bladder does not get well from drainage, nor by constant irrigation is not relieved, you have got pretty positive proof that this is a tuberculous bladder. I agree with the last reader of the paper, that the medical treatment of tuberculosis of the bladder is the line of treatment to be followed out.

Dr. SAMPSON: Tuberculosis of the urinary tract in the female, as Dr. Macdonald so forcibly brought out, is usually primary in the kidney and hematogenous in origin, and the changes in the kidney are the changes of tuberculosis elsewhere. In time the ureter is apt to be involved and also the bladder, so that a very important feature in the diagnosis of this is that we are able to feel the thickened ureter through the vagina and in that way get some idea as to which side is involved or whether or not both kidneys are involved. Of course, a thickened ureter does not mean that it is tubercular; we may have tuberculosis of the kidney without thickening of the ureter. Cystoscopic examination often helps, but we are not able to make a positive diagnosis as to which kidney is involved by the use of the cystoscope, because the bladder may be so diseased that we cannot make out the ureteral orifices. However, if the end of the bladder is not diseased the end of the open cystoscope may be placed about the ureteral orifices and in that way we may collect urine from each kidney. When a kidney is tubercular very often it does not act very well; the other kidney may act very rapidly in advanced stages, and we may have a swollen ureter which it may be very difficult to catheterize. In regard to operative treatment; that is, nephrectomy, under these circumstances I believe that if the ureter is found to be soft, and not hard nephrectomy should be done. When the ureter is found to be thickened, it should be removed down to the bladder. Incision down to the brim of the pelvis and then by a second incision separate the muscles from the perineum and we may follow the ureter down close to the bladder. In regard to the treatment of tuberculosis of the bladder when we can, we should first do a nephrectomy, because it is almost always due to a primary focus in the kidney. But if we are unable to determine from which kidney it arises, or if both kidneys are involved, or if tuberculosis of the bladder persists after the nephrectomy, I think our best results are obtained by incision through the vesico-vaginal septum, and drainage.

Dr. SKILLICORNS Even if these bills (vivisection) pass both houses to-night, we have in the executive chair an unusually fair-minded and honest man, and we can hope that he will veto them on a proper presentation of the matter.

Dr. HACKER cited two cases that he had treated with tuberculin, with poor results.

Dr. GUITERAS: It is very pleasant to have heard a good discussion. I feel that I have taken up a great deal of time in reading such a long paper and talking so much on the different methods of operations. There is no question but what we are all agreed on this subject of surgical treatment of a tubercular kidney when the other is healthy. The medical question comes up when the patient refuses operation or when he is too far gone to be operated upon. After using nitrate of silver solutions in the bladder if you inject a small quantity of the solution of argyrol, from ten to twenty-five per cent., the irritation that usually results from silver nitrate does not occur, or if it does, in a very mild form that is easily borne by the patient. I think it is the best method of washing out the bladder in cases of tuberculosis.

Dr. J. N. VANDER VEER: Speaking from the diagnostic standpoint, I would simply say that the majority of them do not understand the pathological method by animal experimentation—how to go at it; how to get it accomplished, and having found the condition to be present, what to do. Now, we have a laboratory here in the city, and by means of that laboratory every one of my cases of tuberculosis of the kidney has been diagnosed for me. I only know of one case where the bacilli were entangled in albumin by the centrifuge method, and then the pathologist would not state, and I would not have stated positively that I had tubercle bacilli until the guinea pig had been autopsied. Now, if the general practitioner will appreciate the fact that a clean specimen collected in a sterile test tube, then transmitted to the laboratory, and if his patient will wait for about four weeks, no mistake will be made and he can arrive at his conclusions and satisfy more of those who go around from doctor to doctor.

Motion to adjourn, seconded and carried.

ARTHUR J. BEDELL, *Secretary*.

GEORGE G. LEMPE, *President*.

A regular monthly meeting of the Medical Society of the County of Albany was held Wednesday evening, May 13, 1908. Meeting was called to order by President Lempe at 8.35 p. m.

The following members were present: Drs. Applebee, La Salle Archambault, Bedell, A. J., Bendell, Classen, Conway, Cook, Cox, Craig, Curtis, De Voe, W. H. George, Gutmann, Hacker, Harrig, Herrick, Holding, Keens, Krieger, Lawrence, Lawyer, Lempe, Lewi, Lomax, McHarg, MacFarlane, Mereness, C. H. Moore, Morrow, Moston, Murray, Myers, Neuman, D. V. O'Leary, Jr., G. W. Papen, Sr., G. W. Papen, Jr.,

Reynolds, Harry Rulison, L. B. Rulison, Sampson, Shaw, Stevenson, Traver, Ullman, A. Vander Veer, E. A. Vander Veer, J. N. Vander Veer, Washburn, Wilson, Wiltse.

It was moved and seconded that the reading of the minutes of the last meeting be dispensed with and that the minutes as approved by the individual members be printed in the *MEDICAL ANNALS*. Seconded and carried.

Dr. LEMPE, Chairman of the Comitia Minora, said that the committee had nothing to report. His report was accepted.

The Vice-President, Dr. Lomax, being called to the chair, the President, Dr. Geo. Gustave Lempe, read the paper, entitled "The Peritoneum—Observations On."

Dr. HACKER moved that we extend a most hearty vote of thanks to Dr. Lempe for his most excellent paper and for the most excellent manner in which he has filled his office during the past year. Seconded and carried.

The Treasurer, Dr. W. H. George, then presented the following report:

Balance on hand May 31, 1907.....	\$283.70
Collection during fiscal year.....	952.70
	<hr/>
Disbursements during fiscal year.....	866.41
	<hr/>
Balance	86.29
Due State Medical Society.....	12.00
	<hr/>
Net balance at time of annual meeting.....	74.29

The President appointed the following to audit the Treasurer's accounts: Drs. Lomax, E. A. Vander Veer and Mereness.

Nominations for President:

Dr. CURTIS: Albany is exceedingly well supplied with a medical corps, of which each one of us is a part. There are many who are, it seems to me, conspicuous in the profession, and I do not know that any are more so than the one whose name I shall propose for the position for which you ask us to make nominations. One who is a noteworthy member of the profession, whose name is known far outside, not only of the city, but of the State, and one who has conferred much honor on this locality and on this body by his conspicuous contributions to the work of the profession; one who will honor the Society as its head, and who being there will certify to the quality of the Society. Gentlemen, I propose the name of Dr. Willis G. Macdonald.

Dr. MACFARLANE: It was said that one of the most credible things about John Quincy Adams, who was probably one of the greatest presidents of the United States, was that after he had been President he was willing to take the office of congressman and also, I believe, of roadmaster, feeling it was not the position but the way in which the position was filled. Now Dr. Macdonald has been President of the New York State Medical

Society, and a man is especially honored in being called to such a high office. I feel that, although it may seem a drop back to some after having been President of the State Society, he will, as President, reflect honor and credit upon himself and the Society. Gentlemen, I second the motion.

There being no further nominations, Dr. Craig moved that the Secretary be instructed to cast one ballot for Dr. Willis G. Macdonald for the office of President. Seconded and carried.

The Secretary thereupon cast one ballot for the office of President, bearing the name of Dr. Willis G. Macdonald.

The President thereupon declared Dr. Willis G. Macdonald elected President of the Society for the ensuing year.

Dr. NEUMAN: It gives me great pleasure to nominate Dr. Pease for the office of Vice-President. Seconded by Dr. De Voe.

Dr. CLASSEN: I move that the Secretary be authorized to cast one ballot bearing the name of Dr. Pease. Seconded and carried.

The Secretary thereupon cast one ballot for the office of Vice-President, bearing the name of Dr. Herbert D. Pease, and the President declared Dr. Herbert D. Pease elected Vice-President for the ensuing year.

Dr. E. B. WILSON nominated Dr. Bedell for Secretary. Dr. Arthur J. Bedell declined the nomination for Secretary.

Dr. J. N. VANDER VEER proposed the name of Dr. Joseph A. Lanahan for the office of Secretary.

Dr. SHAW said that it was customary for the Secretary to hold over for two years, and saw no reason why Dr. Bedell, who had done very good work, should not accept the nomination, believing that it was the sense of the Society that he do so.

Dr. BEDELL again declined.

Dr. J. N. VANDER VEER's motion, nominating Dr. Lanahan for the office of Secretary was then seconded and carried.

Dr. CURTIS moved that the Secretary cast one ballot for the office of Secretary, bearing the name of Dr. Joseph A. Lanahan.

The Secretary thereupon cast one ballot and the President declared Dr. Joseph A. Lanahan elected a Secretary for the ensuing year.

Dr. W. H. GEORGE declined the nomination for Treasurer.

Dr. A. VANDER VEER: I should like to nominate one whom I have known from his infancy, and whose record for earnest work has been most excellent, Dr. D. V. O'Leary, Jr. Seconded and carried.

Dr. WILTSE moved that one ballot bearing the name of Dr. D. V. O'Leary be cast by the Secretary. Seconded and carried.

The Secretary thereupon cast one ballot for the office of Treasurer, bearing the name of Dr. D. V. O'Leary, Jr., and the President declared Dr. D. V. O'Leary, Jr., elected for the office of Treasurer for the ensuing year.

The Society then proceeded to elect five Censors.

Dr. CURTIS nominated Dr. Lempe.

Dr. SHAW nominated Dr. George.

Dr. HACKER nominated Dr. Gutmann.

Dr. WILTSE nominated Dr. MacFarlane.

Dr. STEVENSON nominated Dr. Rulison, of Watervliet.

Dr. O'LEARY nominated Dr. Classen.

Dr. WILTSE nominated Dr. MacHarg.

Dr. MACHARG nominated Dr. Wiltse.

Dr. RULISON nominated Dr. George W. Papen, Sr.

Dr. BENDELL: I move that the entire Society be nominated and the members permitted to vote. I remember the time when the position of Censor was sought by the very best men of the Society; it was a credit and an honor to sit in the Board. But it appears from the action taken to-night that it is rapidly becoming a farce. Now, many of the men nominated to-night cannot be elected, and the numerous nominations will, of course, require long and tedious tallying. The best thing would be to adopt my suggestion.

Dr. CURTIS: I think that this is the first time a man has ever nominated himself. I would like to second all that Dr. Bendell has said, except his nomination, and to nominate Dr. Bendell for the position. There is certainly no one more entitled to it and has more experience. I ask the Society to allow me to withdraw my name from that list, and in the words of the Secretary, "I refuse to serve."

I move that the first five names be recorded by the Secretary and one ballot cast. Objection.

The President declared the nominations closed, and appointed Drs. E. A. Vander Veer, De Voe and Hacker tellers.

Dr. LOMAX, Chairman of the Auditing Committee, appointed to examine the books of the Treasurer, reported that the books were found to be correct.

The report of the tellers was as follows:

Forty-two votes cast; Dr. Lempe, 39; Dr. George, 25; Dr. Curtis, 23; Dr. MacFarlane, 20; Dr. Rulison, 19.

The President declared Drs. Lempe, George, Curtis, MacFarlane and L. B. Rulison elected as Censors for the ensuing year.

Dr. CRAIG: I have a resolution that I would like to present for the consideration of the Society:

ALBANY COUNTY MEDICAL SOCIETY.

May 13, 1908.

RESOLUTION.

It is a matter of general knowledge that the profession of this city is willing to do all things necessary to assist in stamping out a mild epidemic of scarlet fever. While the cases are of mild character, still under most favorable circumstances the death rate would be of sufficient moment

to warrant the vigorous co-operation of the public medical profession and the Bureau of Health in an endeavor to stamp out the disease at the earliest possible moment. The early suppression of the disease will not only save some lives but also considerable money lost inevitably in a maintenance of quarantine over infected premises. Therefore,

Resolved, That the Medical Society of the County of Albany, in annual meeting assembled, calls upon the public, the medical profession and the Bureau of Health to co-operate in every possible way in a vigorous endeavor to stamp out the present epidemic of scarlet fever. We consider it an imperative professional duty at this time that every member of the medical profession should promptly report all cases of a suspicious disease to the Bureau of Health for investigation if there is any uncertainty as to the nature of the disease; that all cases of measles and other eruptive diseases, unless absolutely typical, should be viewed with suspicion and the cases watched with the greatest solicitude for fear that they might be anomalous cases of scarlet fever; that the release of quarantine should not be advised in all typical or suspected cases of the disease until it has been positively ascertained that desquamation has entirely ceased.

Should competent evidence be obtained that any member of this County Society has so far forgotten his professional obligations in this present emergency as to neglect to report any case of scarlet fever to the proper authorities, or to prematurely ask for the release from quarantine of any such case, the members of the Society hereby request that such violation of law be made the subject of inquiry by the Board of Censors duly authorized by the by-laws of this Society and if sustained that the said Board of Censors report such offending member for trial and punishment, if found guilty.

Dr. CRAIG moved that the resolution be adopted.

Dr. MERENESS: It seems to me that our Board of Health has all the power given them by the statutes that is necessary to enforce everything that Dr. Craig has read in the resolution. It does not seem to me that a paper of that kind is really necessary. I do not see that it gives any additional power or that it is going to benefit any one in any way. It is supposed that the doctors report their cases. If they do not the Health Officer has the power to enforce certain regulations, and I think that he ought to use that power which is given him.

Dr. COOK: It seems to me that if we are going to advertise the fact that epidemics are prevalent we are going to drive business out of Albany to a certain extent. The suppression of these contagious diseases depends upon keeping the afflicted children isolated from other children. I have been able to trace to Sunday Schools contagion where children have not been exposed in any other way. Now, it seems to me that instead of advertising the epidemic we extend our quarantine, the superintendents of Sunday Schools be notified and the disease be handled as in public schools or any public place where people congregate. I think that the person who disinfects the houses should carefully examine the patients. I am not saying this to criticise the Health Officer, for I know that he has a great deal to do.

Dr. CRAIG: I think that we are all anxious to get together and do whatever is right. It seems to me to be wise to make a statement that the profession is doing its duty; I am sure that nothing but good can come of asking the public to co-operate. This resolution says to the public in answer to their argument that the profession is alive to the situation. Regarding the differential diagnosis between measles and scarlet fever, any of us are apt to make a mistake. Dr. Craig then spoke of the epidemics in other cities and how they were not stamped out until the profession got together. The situation demands a little publicity.

Dr. WILTSE: I believe as Dr. Craig does. The public has been led to a wrong conclusion, and I am sure that a frank statement by this Society will reassure it, will create confidence in the profession. I cannot say personally, but by hearsay, which comes pretty direct, that some cases of scarlet fever have not been reported. This is not fair to the public and the rest of the profession. They feel it is rather a hardship if their neighbor has some condition in the family and the doctor does not report the case. "How is it that we are shut up and deprived of our work, while my neighbor has the same thing and is not restrained at all?" I do not know of any specific instance, but I think that what is fair for one is fair for all. I am of the opinion that this disease could be more thoroughly handled and much more quickly stamped out by the adoption of this resolution than in any other way.

Dr. CURTIS: I want to say that doubtful cases ought to receive judicious, sympathetic and considerate help and care at the hands of the Department of Health. There is no disease that is so difficult to diagnose as scarlet fever; it is absolutely impossible to diagnose cases of it at times. Such cases could be treated with certain consideration as long as doubt remains. The question of release from quarantine is one that the Board of health determines by time. I have no hesitation in saying that is not a measure in my mind; time certainly is, for after a certain time infection ceases.

Dr. CRAIG's resolution was adopted.

Dr. MACFARLANE said that he had a list of a number of boarding houses where patients suffering from tuberculosis could be sent and kept at a reasonable cost. These houses were guaranteed by Bishop Nelson and were situated about eight miles from Loon Lake. There are two ways that this information can be given to the public; either the men can come to me and get a copy of the list or the Society can have this list printed and sent out to each member, and can guarantee this list.

Dr. MERENESS: I move that the Secretary prepare a list of the boarding-houses as stated by Dr. MacFarlane, have these lists printed and a copy be given to each member of the Society, also that the list be printed in the ANNALS.

Dr. MACFARLANE: If this list is printed in the ANNALS it will be published the first of June and will save the Society the expense of having separate lists printed.

Dr. MERENESS withdrew his motion to have lists of the boarding-houses printed.

Motion to have the list printed in the MEDICAL ANNALS was seconded and carried.

Dr. HACKER: No doubt every member has received a printed report in regard to the work of the committee regarding the state of affairs in Pavilion F. The first thought that struck my mind was that there was considerable expense to that work. Therefore, I would like to ask Dr. Classen what the amount of the expense was.

Dr. CLASSEN: There was an expenditure of eighteen dollars for printing this pamphlet.

Dr. HACKER: How much of a balance have we in the treasury?

The PRESIDENT: \$74.29.

Dr. HACKER: I move that the Society reimburse this committee for its expenditure incurred in furnishing this most excellent report. Seconded and carried.

Dr. WILSON: Dr. Macdonald, who was unable to be present, wishes me to extend to the Society his gratification and his thanks; he also extends an invitation to adjourn to some quiet spot and have a bite to eat.

Motion to adjourn, seconded and carried.

A. J. BEDELL, *Secretary*.

The Committee on Education and Publicity of the Anti-Tuberculosis League, Albany Branch of the State Charities Aid Association, have investigated a number of boarding places in the Adirondacks for tuberculosis patients of moderate means and can recommend the following list of boarding houses as suitable places for such patients.

The Committee urgently recommend to physicians the absolute necessity of impressing upon such patients the vital need of preventing contagion and that the success of this measure depends upon the care each patient takes in regard to personal hygiene:

Grove Farm Cottage, James Cochrane, Prop. Rates, \$4 to \$7 per week. Five miles from Loon Lake, in Merrillsville. P. O., Ozonia, Franklin County, N. Y. Special rates to families.

Mountain View Cottage, W. H. Cochrane, Prop. Rates on application. P. O., Ozonia, Franklin County, N. Y.

Cold Spring Farm, Mrs. Joseph Stickney, Proprietress. Rates, \$7. P. O., Ozonia, Franklin County, N. Y.

Farm Cottage, Lem Merritt, Prop. Rates on application. P. O., Ozonia, Franklin County, N. Y.

Grove Farm House, Mrs. Cunningham, Proprietress. Rates, \$5 to \$7. P. O., Ozonia, Franklin County, N. Y. Special rates for families.

Farm House, Joseph Stickney, Prop. Rates, \$5 to \$7 per week. P. O., Alder Broom, Franklin County, N. Y.

Farm House, Cyrus Stickney, Prop. Special rates on application. Usual rates \$7 up. P. O., Loon Lake, N. Y.

Buena Vista Cottage, Mrs. J. M. Wardner, Proprietress. Rates, \$8 to \$12 per week. P. O., Rainbow Lake, N. Y.

Farm House, Frank M. Wardner, Prop. Rates, \$9 up. P. O., Rainbow Lake, N. Y.

Garondah Cottage, T. C. Toof, Mgr. Rates on application. Usual rate, \$12 up. P. O., Rainbow Lake, N. Y.

Russell Farm Cottage, Mrs. Geo. Russell, Proprietress. Rates on application. Special rates to families. P. O., Gabriel, N. Y.

Cobble Spring Farm, Mrs. W. D. Plumley, Proprietress. Rates, \$5 to \$7. P. O., Bloomingdale, Essex County, N. Y.

Farm Cottage, B. T. Norman, Prop. Rates, \$7 to \$8. Special rates to families. P. O., Bloomingdale, Essex County, N. Y.

Farm Cottage, Ed. Sears, Prop. Terms on application. This man is building a new house this year and expects to have everything in first-class shape. P. O., Onchiota, N. Y.

The post office address of the following is Bloomingdale, Essex County, N. Y.:

Sun Set Rock, W. C. Smith, Mgr. Rates, \$12 per week up. All modern improvements. Resident physician and nurse. This is the best place around here.

Waverly Inn, Mr. Lewis Pelky, Prop. Rates, \$8 up. This is practically a hotel but without a bar and is modern.

Gillispie Cottage, Mrs. H. Gillispie. Rates, \$7 to \$12.

Lennon Cottage, Mrs. W. D. Lennon. Rates, \$7 up.

Fletchers Farm, Mr. John Rogers. Rates on application. This is one of the largest and most popular resorts around here, but is only open during the summer. They can accommodate about 50 people. One and one-half miles out of village.

James Butler. Rates, \$8. This man has just come here and is fixing up a large boarding place. He is going to have every modern convenience in the house. It is very nicely situated, about a mile out of the village.

The post office address of the following is Vermontville, Franklin County, N. Y.:

Valley Farm Cottage, H. L. Abbott, Prop. Rates, \$7 to \$10 per week.

Adirondack Farm Cottage, Monroe D. Castlow, Prop. Rates, \$5 to \$7.

These are the usual rates, but they vary somewhat and people can usually make their own rates. A great deal depends on how sick people are.

There are two large boarding places in Harriettstown, about two miles from here. One is kept by Mr. Fitzgerald and the other by Mr. F. Tremble. The rates vary and are given on application. Sometimes people prefer to live in the tent, others in the main building. The post office address of both is Harriettstown, Franklin County, N. Y.

COLUMBIA COUNTY MEDICAL SOCIETY

The semi-annual meeting of the Columbia County Medical Society was held at the Empire House, Philmont, N. Y., May 5, 1908, the President, Dr. S. Whitbeck, in the chair.

The following members were present: Drs. S. Whitbeck, T. F. Woodworth, H. W. Johnson, G. W. Rossman, G. E. Swift, E. Niver, J. T.

Wheeler, N. H. Mesick, E. Oliver, F. C. Maxon, Jr., E. Palmer, J. R. Conklin, D. H. Southworth, R. C. Waterbury, L. Van Hoesen, Z. F. Dunning and G. W. Vedder.

Letters were received from Drs. Wisner R. Townsend and Frank Van Fleet regretting their inability to be present at the meeting.

A letter from Dr. G. W. Cottes, Secretary of the Genesee Medical Society, in regard to the Garnishee law and illegal practice of medicine was read. The society engaged in a discussion of the questions of this letter, which were tabled for action at the annual meeting.

Dr. F. C. MAXON presented a paper on "Gastric Neuroses," which was discussed by Drs. Whitbeck, Wheeler and Dunning.

Dr. Z. F. DUNNING read a paper on the "Scarlet Fever Epidemic at Philmont." Dr. Dunning's paper was discussed by Drs. Johnson, Niver and Swift.

Dr. VAN HOESEN presented a paper on "Our Efforts to Decrease the Mortality of Pulmonary Tuberculosis." Dr. Van Hoesen's paper was discussed by Drs. Swift, Wheeler, Maxon, Dunning, Rossman and Vedder.

Dr. WOODWORTH presented a paper on "Influenza."

Dr. WHEELER spoke by request on the report of cases to the health officers of different localities.

At the suggestion of Dr. Johnson a motion was carried that all papers read before the society should be filed for reference.

A resolution was adopted that the secretary be empowered to pay all indebtedness of the society. The meeting adjourned.

T. F. WOODWORTH, *Secretary*.

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD, DEPARTMENT OF VISITING NURSES—STATISTICS FOR APRIL, 1908. Number of new cases, 135; *Classified as follows*: Dispensary patients receiving home care, 6; district cases reported by health physicians, 26; charity cases reported by other physicians, 55; moderate income patients, 48; old cases still under treatment, 59; total number of patients under nursing care during the month, 194. *Classification of diseases* (new cases): Medical, 46; surgical, 9; gynecological, 5; obstetrical, 38 mothers and 34 infants under professional care; dental, 1; skin, 1; throat and nose, 1; contagious diseases in the medical list, 10; removed to hospitals, 4, deaths, 9.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; medical students in attendance, 2; Guild nurses, 4; patients, 2; visits by attending obstetricians, 2; by the students, 18; by the nurses, 20; total number for this department, 40.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,401; for professional supervision of convalescents, 291; total number of visits, 1,692. Cases were reported to the Guild by

four of the health physicians, by thirty-one other physicians and by one dentist. Nine graduate nurses and four assistant nurses were on duty.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on June 6, 1908, for the following positions: Axeman, \$2 a day; Chief Engineer, Erie County Service, \$4.50 a day; Examiner, Insurance Department, \$2,000 to \$2,500; Inspector of Weights and Measures, \$1,100; Keeper, Onondaga County Penitentiary, \$600; Library Assistant, State Library, \$600; Storekeeper, State Hospitals and Institutions, \$400 to \$750 and maintenance; Watchman, Sing Sing Prison, \$2 a day.

The last day for filing applications for these positions is May 30th. Full information and application forms for any of these examinations may be obtained by postal card request to the Chief Examiner of the Commission at Albany.

ALBANY HOSPITAL TRAINING SCHOOL graduated a class of twenty-five nurses May 20th. Dr. Vander Veer delivered the address.

MEDICAL EMERGENCIES—A GREAT SOCIETY FOR COPING WITH THE EMERGENCIES OF PEACE AND WAR.—The National Volunteer Emergency Service, instituted in 1900; has recently been reorganized by the election of Dr. James Evelyn Pilcher, the distinguished editor of *The Military Surgeon*, as its Director General, and Dr. F. Elbert Davis, of New York, as its Adjutant General. Its work will be conducted along military lines, the details being worked out in three separate Corps, a First Aid Corps, a Public Health Corps, and a Medical Corps—the latter consisting of physicians, with rank from Lieutenant to Colonel, according to length of service, to whom are afforded special opportunities for emergency training. It includes among its personnel a large number of notable personages, and is rapidly extending its membership throughout the country. Full details regarding the Service and its great work may be obtained by addressing Director General Pilcher at Carlisle, Pa.

HOSPITAL CHARITIES.—As a result of the recent "Cosmovilla" St. Peter's Hospital, Albany, has received over \$36,000.

On May 2nd—"Tag Day"—the Homeopathic Hospital received over \$12,000.

Ellis Hospital, Schenectady, realized over \$6,000 from "Tag Day."

THE MEETING OF THE NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY AND THE CARE AND TREATMENT OF EPILEPTICS is to be held at Indianapolis, Indiana, on Tuesday and Wednesday, November 10th and 11th, 1908. Those desiring to attend the meeting and present papers should communicate with Dr. J. F. Munson, Secretary and Treasurer The Craig Colony for Epileptics, Sonyea, N. Y.

THE AMERICAN SURGICAL SOCIETY at its recent meeting held in Richmond, Va., elected Dr. Albert Vander Veer a member of the Council.

SCHENECTADY NURSES' SCHOOL.—The Schenectady Physicians' Hospital Training School for Nurses has been incorporated. The directors are Dr. George E. McDonald, Dr. John H. Collins, Dr. Charles F. Clowe, Dr. Frank Vander Bogart, and Dr. E. McDonald Stanton, of Schenectady.

THE WATERVLIET MEDICAL SOCIETY at its last meeting listened to papers by Drs. Dederick and Albright.

FAREWELL DINNER TO DR. PEARCE.—A farewell dinner was given to Dr. Richard Mills Pearce, Saturday evening, May 16, by the Laboratory Club. The affair was a surprise to the Director of the Bender Laboratory, who was lured to the Hampton at eight o'clock under the pretense of meeting a German professor.

A delightful banquet was enjoyed, after which Dr. Carey, as Toastmaster, introduced the following speakers::

E. McD. Stanton....."Early Reminiscences"
Erastus Corning....."The Pathologist from a Social Standpoint"
Holmes C. Jackson....."Chemical Evolution of the Pathologist"
W. A. Krieger....."The Woes of the Under Dog"

Drs. Becker, Buchan, Blackfan, Carey, Corning, Doescher, Dwyer, Gutmann, Hawn, Hacker, Douglass, Krieger, Jackson, Ellice MacDonald, Sawyer, Sautter, Schaible, Stanton, Sampson, Lipes, Winne and Dr. Pearce were present. Regrets from Drs. Donnhauser, Rooney and Archambault.

A handsome loving cup was presented to Dr. Pearce, who made a feeling response.

PERSONALS.—Dr. E. B. WILSON (A. M. C., '03) after a year as resident in Albany Hospital and two years with Dr. Macdonald, will, on June 1st open his office at 49 Bergen Avenue, Jamaica, L. I.

—Dr. HENRY HUN was elected First Vice-President of the Association of American Physicians at its annual meeting, May, 1908.

—Dr. HOWARD VAN RENSSELAER, at the last meeting of the American Therapeutic Society, was chosen Vice-President.

—Dr. WALTER A. REYNOLDS (A. M. C. '05) has opened his office at 232 Clinton Avenue, Albany. Dr. Reynolds has been a resident in Albany Hospital one year and Dr. Vander Veer's assistant since June, 1907.

—Dr. C. H. HERRICK (A. M. C., '93) has moved from Eagle Street to 113 Lancaster Street, Albany.

—Dr. G. W. E. GOODELL (A. M. C., '94) is at Bridgeport, Madison County, N. Y.

—Dr. FREDERICK C. LEONARD (A. M. C., '98) has removed from Worcester, N. Y., to Carbondale, Pa.

—Dr. JOSEPH A. LANAHAN (A. M. C., '99) has removed from 1 South Hawk Street to 99 Eagle Street, Albany.

—Dr. LASALLE ARCHAMBAULT (A. M. C., '02) is now at 211 State Street, Albany.

—Dr. C. R. HOFFMAN (A. M. C., '03) has been appointed city physician of Glens Falls, N. Y. He is at present attending the Bender Laboratory.

MARRIED.—Dr. Robert S. Lipes (A. M. C., '97) and Miss Lillian Marie Ford were married Wednesday, April 29, 1908, at Athens, N. Y.

DIED.—Dr. H. C. PECK (A. M. C., '75) died May 11, 1908.

In Memoriam

HAMILTON A. WHITE, M. D.

Dr. Hamilton A. White died at his home in Fort Plain, N. Y., on March 20, 1908, after a few days' illness of pneumonia, aged fifty-seven years.

Hamilton A. White was born at Richmondville, N. Y., October 5, 1850. His grandfather, Isaac White, was one of the first settlers of Schoharie County. As a young man Dr. White chose the profession with which he was always identified, and graduated from Albany Medical College in the class of 1880. He began practice in Argusville, N. Y., where he remained 'till 1892, when he located in Fort Plain, N. Y., and built up an extensive practice. In 1906, because of poor health, he gave up active work and traveled for a year, returning to Fort Plain in May, 1907, where he did an office practice up to the time of his death.

For twenty-five years he was an active member of the Methodist Church and at one time was prominent with the Masons, K. of P., Foresters, and the O. U. A. M. He is survived by his widow and two sons, Dr. L. O. White, of Sharon Springs, and L. Maynard White, a successful dentist of Atlanta, Ga.

MARY DU BOIS, M. D.

Dr. Mary Du Bois, of Hyde Park, N. Y., died at her home there March 2nd, 1908, of valvular disease of the heart. Dr. Du Bois had been in feeble health for some time but died suddenly, at the age of seventy-five. She graduated from the Woman's Medical College of Pennsylvania and was in active practice about twenty-five years, most of that time in Albany, where she was well known and loved. She spent two years at the New England Hospital for Women and Children and traveled extensively in Europe and Mexico.

She was the first woman admitted to the Medical Society of the County of Albany and her application for membership met with considerable opposition at first. This was commented upon in an Albany newspaper as follows: "Until recently no inroad had been made by women on the regular medical profession in this city. Albany is known to be conservative and the prospect was regarded as anything but promising for the introduction of the idea that there was a proper place for women in the legitimate practice of medicine. But one woman reasoned that there were

in Albany at that time more than seventy thousand people, among whom there would be some to appreciate the propriety of a woman endowed with a thorough medical education and qualified by experience and observation to treat diseases in all their forms, and especially those of her own sex.

"Dr. Du Bois made early the acquaintance of her medical colleagues in Albany and from them received a cordial welcome, but from almost everybody came the kindly warning that she would not succeed. She did, however, and numbered among her patients some of the best families in Albany."

J. M. CRONK.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Bier's Hyperemic Treatment in Surgery, Medicine and all the Specialties. A Manual of Its Practical Application. By WILLY MEYER, M. D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; and Professor Dr. VICTOR SCHMIEDEN, Assistant to Professor Bier at Berlin University, Germany. Octavo of 209 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, \$3.00 net.

Fifteen years ago Bier brought to the attention of the medical world a treatment for chronic tubercular disease of the joints by means of "Stauungs-hyperaemie." Two years later he advocated the same method of treatment for acute inflammatory conditions and at the same time, Klapp introduced the suction modification of producing the "Stauungs-hyperaemie."

The medical profession in general, but especially in Germany, were quick to recognize the value of hyperemia as a therapeutic agent and an ever increasing number of reports and discussions concerning its use in a great variety of diseased conditions have been published.

One of the latest contributions to the subject of Bier's hyperemic treatment is by Dr. Willy Meyer, the leading exponent of the treatment in America and Professor Victor Schmieden, assistant to Professor Bier at Berlin University.

The present work is an octavo volume of 209 pages; well printed and beautifully illustrated. The book is indexed and the practical character of the work is further enhanced by a system of marginal notes.

There is almost an entire absence of theoretical discussion throughout the book and the work is essentially a practical one. The uses of Bier's hyperemia in general surgery and medicine are fully presented as is also its use in the specialties of gynecology, obstetrics, genito-urinary surgery, otology, ophthalmology, rhinology, pharynology, laryngology, neurology, psychiatry and dermatology.

Following an introduction in which the underlying principles of hyperemic treatment are set forth there are three chapters describing the methods of inducing hyperemia by means of an elastic bandage or band, by means of cupping glasses and by means of hot air. The remainder of

the book is devoted to the treatment of special diseases by means of artificial hyperemia.

In conclusion, the authors reiterate their belief in the principles and value of Bier's treatment and state that we are only just beginning to appreciate its possibilities. At the same time, however, they caution against its unintelligent use.

J. M. B.

International Clinics. A quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by W. T. LONGCOPE, M. D., Philadelphia, U. S. A., with collaboration of WM. OSLER, M. D., Oxford; JOHN H. MUSSER, M. D., Philadelphia; A. MCPHEDRAN, M. D., Toronto; FRANK BILLINGS, M. D., Chicago; CHAS. H. MAYO, M. D., Rochester; THOS. H. ROTCH, M. D., Boston; JOHN G. CLARK, M. D., Philadelphia; JAMES J. WALSH, M. D., New York; J. W. BALLANTINE, M. D., Erinburgh; JOHN HAROLD, M. D., London; RICHARD KRETZ, M. D., Vienna, with regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume IV, Seventeenth Series, 1907. Philadelphia and London. J. B. Lippincott Company.

Many and varied are the topics treated upon in this volume, we can mention but a few which seem of particular general interest.

A Study of Gastropptosis from the Radio-graphic Standpoint. By HENRY K. PANCOAST, is a most exhaustive article and its value is greatly enhanced by sixty-seven illustrations. The writer deals with:

1. Preparation of the patient.
2. Technique of the examination.
3. Correct interpretation of the skiagraph.

He describes five distinct types of Gastropptosis, and for convenience has added as a sixth type the anatomically normal stomach, as follows:

1. The normal stomach.
2. The transitional type.
3. The anatomical type.
4. The tubular type.
5. The sagging type.
6. The dilated type.

The article should prove of great assistance to a correct interpretation of radio-graphic pictures of the stomach.

The Treatment of Dysmenorrhoea by Forcible Dilatation of the Cervical Canal and Application of the Wylie Drain. By HENRY D. BLYEA. The variety under consideration the author calls for the sake of convenience the dysmenorrhoea of pathological antelexion. Characterized clinically by violent intermittent or constant sharp, shooting pain in the lower abdomen,

pathologically by underdevelopment of the muscularis and extreme ante flexion. The treatment consists in thorough and prolonged forcible dilatation of the cervix followed by the introduction of a hard rubber Wylie drain which is allowed to remain in situ from three months to one year. The results in forty-six cases extending over three years are satisfactory.

The Ophthalmo-reaction to Tuberculin, a New Means of Diagnosing Tuberculosis in Man. By Professor G. CALMETTO, of Lille. The best method of procedure consists either in using an aqueous solution of precipitated tuberculin or in preparing the solution extemporaneously by dissolving five milligrams of dry precipitated tuberculin in ten drops of warm boiled water. "One drop of this solution instilled in the inner angle of the eye ***** is always sufficient to produce the reaction." Three to five hours after such an instillation all tuberculous patients show very manifest congestion of the conjunctiva. The reaction is painless and usually disappears at the end of thirty-six hours. There appears to be no relation between the intensity of the reaction and the gravity of the lesions. Patients with tubercular lymph-nodes often react more energetically than pulmonary cases with cavities.

Disorders of Sleep. By PURVES STEWART. In considering insomnia the writer considers the causes either extrinsic (when due to factors not directly associated with the cerebrum or its blood-vessels) or intrinsic, commonly due to vascular, toxic or nervous faults or to combinations of all three. The article contains many helpful suggestions to the general practitioner.

Tuberculosis of the Lymph Glands in Children. By JOHN H. JOPSON. A readable and suggestive article, giving a review of the medical, but laying the stress upon the surgical aspect of the disease.

H. D. C.

SURGERY

Edited by Albert Vander Veer, M. D. and Arthur W. Elting, M. D.

Lung Complications following Abdominal Operations. (Ueber Lungencomplicationen nach Bauchoperationen.)

EUGEN BIBERGEIL. *Archiv für klinische Chirurgie*, Band 78; Heft 2.

The writer begins the article with a discussion of the different theories presented to explain the pulmonary disturbances following operation, and finds that they are in general ascribed, first, to narcosis; second, aspiration from the mouth; third, embolism; fourth, cooling of the body during operation; fifth to epidemics of pneumonia; sixth, to the entrance of bacteria, chiefly from the air, into the subdiaphragmatic space during operation. He considers especially the work of Henle from the Breslau clinic, where in 1787 laparotomies eight per cent. developed pulmonary complications and three and six-tenths per cent. died. Most of the pneumonias were lobular in character. The right lower lobe was more frequently affected than the left. Henle also believes that weakness of the heart and circulation is an important predisposing factor. He emphasizes the much

greater percentage of pneumonias following gastro-enterostomy for carcinoma, which occurred in fourteen per cent. of this class of cases with a mortality of nine per cent.; while in similar operations for benign stenosis of the pylorus there was only nine and one-half per cent. of pneumonia, with no mortality rate.

The matter was extensively considered at the last German Surgical Congress and at that time Kelling distinguished two groups of factors: first, predisposing factors, such as age, race, anesthetic, vaso-motor influences, psychical disturbances, pain, alcoholism, carcinomatous cachexia. Secondly, infection, occurring either from the bronchial passages or from the blood or lymph channels.

The writer presents a careful study of all the pulmonary complications of abdominal operations observed at the Urban Hospital in Berlin from 1890 to 1905. In 3,909 abdominal operations there were 283 lung complications; that is, seven and three-tenths per cent. Of this number 815 were operations above the level of the umbilicus, with eighty pulmonary complications, a morbidity of nine and eight-tenths per cent.; 2,625 operations were below the level of the umbilicus, with 173 pulmonary complications, a morbidity of six and six-tenths per cent. There were also 469 operations in which the incision extended from the ensiform to the symphysis, in which there were thirty pulmonary complications, a morbidity of six and four-tenths per cent. There were three and five-tenths per cent. pneumonias, taking all the cases into consideration, which is approximately the statistics of Czerny and other observers. There were ten cases of lobar pneumonia; ninety-eight of broncho pneumonia, and twenty-seven of hypostatic pneumonia. These statistics show the far greater frequency of broncho-pneumonia as a complication.

The question of anesthetic does not appear to play any very important role in the development of the pulmonary complications. The percentage of such complications following local anesthesia is practically as large as that following general.

Exposure to cold, either during or immediately after an operation, is regarded as an important factor.

The writer also believes that restriction of the respiratory movements is also of the greatest importance, and for that reason tight abdominal bandages or anything that represses the abdomen or restricts the range of respiration is always avoided after operation. Patients are encouraged to breathe deeply. If there is much pain morphine is freely used, which assists the deep breathing. Frequent change of position is also of importance in preventing pulmonary complications.

The writer believes that the important etiological factors can be divided, first, into those of an individual character or an idiosyncrasy; secondly, those due to external influences; thirdly, those due to the anesthetic; and fourthly, those due either to mechanical or infectious influences after operation. He emphasizes especially the importance of bronchitis or pulmonary disturbance prior to operation. He does not regard the cooling off of the body during or immediately after the operation as of as much importance as is often assumed. He regards aspiration during the anesthesia as of considerable importance. After practically all abdominal

operations a tenderness in the region of the wound is aggravated by deep breathing, and for this reason there is a tendency on the part of the patient to restrict the range of respiration and this is regarded as an important factor, which is especially noticeable in operations above the level of the umbilicus, in which locality the sensitiveness of the wounds is markedly increased by respiration, and this he regards as the most important factor in explaining the greater frequency of pulmonary complications after operations above the level of the umbilicus.

The more frequent involvement of the right lower lobe is explained by the anatomy of the right bronchus, which is wider than the left and into which material from the mouth is more apt to be inspired.

It would not appear that infection plays a very important role in the production of pulmonary complications other than those of embolism and infarct.

The transportation of bacteria through the lymph channels to the lung and the production in this fashion of a pneumonia is decidedly problematical. Pleural involvement, however, may be associated with peritoneal involvement of the upper portion of the abdomen.

The writer comes to the conclusion that the cause of the lobular pneumonia, which is the most frequent pulmonary complication after abdominal operations, is mainly in the auto-infections; that is, in aspiration during the anesthesia. He believes that the restriction of the respiration and the difficulties of expectoration because of the pain in the region of the wound are extremely important accessory factors. Persisting weakness of the organism, as well as the weakening influence of the operation, are also factors of importance.

The occurrence of lobar pneumonia he believes is due to the escape of the pneumococcus either from the mouth or to its assumption of disease-producing properties from its location in the upper air passages.

Prophylaxis he regards as of importance, and consists of the curing of irritation of the respiratory passages prior to operation, careful cleansing of the mouth and pharynx; washing of the stomach prior to operations upon the stomach or intestine; avoidance of nourishment prior to operation; keeping the head of the patient on the side during the administration of the anesthetic to allow the ready escape of fluid from the mouth; the avoidance of cooling of the body during or after operation; frequent change of position after operation; avoidance of restricting bandages; and attention to any evident heart weakness.

Concerning the Case of a Man Castrated in Early Life. (Ueber einen im jugendlichen Alter Kastrierten.)

ALFRED STIEDA. *Deutsche medizinische Wochenschrift*, No. 13, 34 Jahrgang.

The patient, a man thirty-six years of age, presented himself for treatment for osteoarthritis of the elbow joint. It was found on examination that he had lost both testicles at the age of fifteen. He had been set

upon by three men, two of whom held him while the third one lacerated both testicles between the fingers until they were completely destroyed. This process lasted for about an hour. The scrotum became markedly swollen the next day. When the swelling gradually disappeared the testicles could no longer be felt. The outer genitalia never showed any subsequent development. The patient did not grow, and his voice has remained unchanged since the occurrence of the injury. The patient at the time of the injury was very small and under-developed and did not grow practically at all until his nineteenth year. Because of his small stature and poor development he was not admitted to the military service. From his nineteenth to thirtieth years, however, he grew very steadily and attained large stature. The sexual function he asserts is excellent. He has perfect erections and satisfactory coitus. He also has ejaculations, but of very small amount. He has indulged in coitus since his twentieth year and has been married since his thirtieth. He has, however, no children.

On examination he was found to be a well-developed man. Extremities were unusually long. The shoulder breadth is narrow. The pelvis is broad. There is but little axillary and pubic hair. The larynx is small. The voice is high pitched. The outer genitalia are very much under-developed. The testicles are about the size of beans the left perfectly soft, the right slightly harder. They are quite sensitive. The vasa deferentia can be felt. The prostate is small.

This method of castration has been described by Paul v Aegina. It was the custom to bathe the boys in warm water or infusions of plants and then to press and rub the testicles between the fingers until they were completely destroyed. Occasionally instruments were also used to crush the testicles. This was known as the bloodless method of castration.

The protracted growth in length of the bones in this case is one of the striking features and is naturally due to a persistence of the epiphyses. The increased growth in length has been experimentally shown to be associated with castration. Sellheim has found that there are very striking disturbances in the growth of bones associated with castration in early life. The period of ossification of the cartilaginous skeleton is very much protracted, especially the region of the epiphyses of the bones of the extremities. The result is very marked alterations in the normal proportions of the extremities, the skull, the pelvis and the thorax. These changes in growth have in some instances been found to be associated with an enlargement of the hypophysis, which as shown by Fichera may become twice its normal size after castration.

The writer emphasizes the fact that delayed ossification of the epiphyses may have some relationship to a disturbance of the development of the testicles. The occipital bone in the case reported by the writer did not differ from the normal. This is contrary to the statement of Gall that the prominence and size of the occipital bone corresponds to the degree of sexual function and that in castrated individuals it was of very slight prominence or even might be flattened.

Rheumatismus tuberculosus—Poncet.

P. ESAU. *Münchener medizinische Wochenschrift*, No. 8, 55 Jahrgang.

The above term as a specific disease is a comparatively new one. Poncet was the first to present the complete clinical picture of the disorder, and he and associated writers have published numerous articles upon it during the past few years. The majority of the communications upon this subject have been in the French literature. White, in England, has especially written upon this subject, while only a few articles have appeared in German. The writer reports the case of a child of six and one-half years treated in the Johannis Hospital at Bonn under Bier, in which the disease in several acute and subacute exacerbations involved in succession both knees, both ankles, the right hip and the cervical vertebrae. These attacks were accompanied with high fever and pronounced illness. Some of the joints showed marked contractures, and under orthopedic measures and hyperemia the disease was apparently cured, with firm fibrous ankylosis in some of the joints, while in others there was complete restoration of function. In the hip joint, however, a bony ankylosis occurred. The X-ray picture, as well as the clinical appearances, seemed to indicate a tuberculous nature of the process without any question. There was no family history of tuberculosis; the only antecedent disturbance was a small suppurating gland in the neck. There was no other antecedent disease which might have given rise to this condition.

Spitzzy, in the demonstration of the tuberculous character of these processes, has emphasized the necessity for animal inoculation with the fluid secured by aspiration of the diseased joints and for the tuberculin reaction. It was impossible to obtain any such fluid in this case, and for certain special reasons tuberculin was not used.

The beginning of this disease can be very variable in character. The ankylosing process may occur in several joints at the same time, the joints being involved by pseudo-rheumatic disturbances. The disease may progress to an ankylosis, when pain usually ceases. In some cases fever, sweating and emaciation are prominent symptoms. The disease does not present a tendency to abscess formation or white swelling. Frequently homologous joints are involved, either simultaneously or one after the other. The ankylosis is more often fibrous, and only rarely bony. Poncet and Leriche distinguished two types, peripheral and vertebral. Lorenz has especially emphasized the latter.

From the pathological investigations of Poncet the process seems to be a purely inflammatory and sterile one, and he assumes that it is the result of the action of the toxins of the tubercle bacilli. The prognosis has hitherto been regarded as rather grave. Poncet and Lorenz have called attention to two types of progression of the disease: a favorable one, in which the synovia is chiefly involved and which is usually associated with effusion. This type of the disease usually ends in a fairly satisfactory result. The other type is much more malignant, with involvement of the periarticular tissues and the bone, without effusion, and with a marked tendency to ankylosis.

The writer especially emphasizes the value of hyperemia in the treatment of these cases, either the active or the passive form. In bony anchyloses operative measures are sometimes necessary to overcome the deformity and interference with function.

Contribution to the Treatment of Perforated Gastric and Duodenal Ulcers.
(*Beitrag zur Behandlung des in die freie Bauchhöhle perforierten Magen und Duodenalulcus.*)

VON EISELBERG. *Deutsche medizinische Wochenschrift*, No. 50, 32nd Jahrgang.

In only about five per cent. of the cases of perforation of gastric or duodenal ulcers does spontaneous recovery occur. In general from fifty to sixty per cent. recover after surgical treatment. It is generally agreed that an operation should be performed as soon as possible after the occurrence of the perforation. There is some question as to whether irrigation or sponging of the peritoneal cavity is better, and further some difference of opinion as to the method of drainage.

The writer reports the cases which have come under his own observation during the last five and one-half years. These cases were twelve in number, five of which recovered and seven died. These results are not as favorable as those reported by some writers, but are more favorable than those reported by others. Caird reports eighteen cases, with eleven recoveries. Noetzel, sixteen cases, with nine recoveries. Mayo, thirteen cases, with nine recoveries. Kümmell, fourteen cases, with five recoveries; and Smith, eleven cases, with five recoveries. The writer's experience agrees with that of other surgeons, that the earlier the operation is performed the better the prognosis.

In seven of his twelve cases, after closing the perforated ulcer the writer has made a temporary fistula into the jejunum after the method of Witzel, for the purpose of nourishing the patient during the days succeeding the operation. Four of these died and three recovered. His belief, however, is that this is a valuable addition to the technic of the operation, and further he believes that it assists the patient in the struggle with the infectious elements. He is also a believer in thorough irrigation of the peritoneal cavity and the use of salt solution subcutaneously and intravenously. It is also his custom to drain the wound freely.

An important question is as to whether a radical operation for the cure of the ulcer should be advised after the patient has recovered. In one of the writer's cases the patient subsequently developed a new ulcer, which perforated after the lapse of some years. Of his five cases which recovered, four have remained perfectly free from all gastric disturbance and there has been no occasion to suggest any further treatment.

In conclusion, he says that the practicing physician who sends his patient promptly to the hospital, instead of losing time with morphine, plays a far greater role in the favorable outcome of the case than the surgeon.

NEUROLOGY

Edited by Henry Hun, M. D.

Concerning Structural Changes in the Brain of Luetic New-born. (Ueber Gewebsveränderungen im Gehirne luetischer Neugeborener.)

OTTO RÄNKE, IN WIESLOCH. *Neurologisches Centralblatt* 1907, February 1st, No. 3, p. 112; *Neurologisches Centralblatt* 1907, February 15th, No. 4, p. 157.

The author calls attention to the nervous and mental disorders which those children present whose progenitors were syphilitic. He quotes from the statistics of Jullien who found in 162 children born of forty-three syphilitic parents, "meningo-eclamptic manifestations" in fifty per cent. and from Ziehen, who was able to ascertain with absolute certainty the existence of syphilis in the parents in ten per cent. of the large number of weak-minded children and idiots observed by him; in seventeen per cent it was extremely probable.

Until very recently, the anatomic basis of this clinical fact had remained most unclear. Postmortem examination of a large number of hereditary syphilitics who had presented, intra-vitam, evidences of nervous disorder, had revealed but very seldom the presence of acknowledged specific luetic lesions, as for instance: gummatous growths, Heubner's endarteritis, etc. Likewise, meningeal processes, the occasionally described meningo-encephalitis and myelitis, aside from the type defined by Erb, have remained rarely encountered lesions.

Virchow's view of an interstitial encephalitis of the syphilitic new-born has proven to be erroneous. Mracek's idea of a hemorrhagic diathesis in congenital lues which would favor the occurrence of hemorrhages in the central nervous system has also failed to solve the problem.

The author insists in the first place upon the fact that up to the present time, the finer histology of the embryonic nervous system has been almost totally ignored. It is imperative to thoroughly investigate by modern technical methods a large number of normal preparations, to become familiar with the changes occasioned by factors well known to us, such as: traumatism at birth, septic processes, etc., and then, finally, to ascertain whether or not in cases of unquestionable hereditary lues, pathologic changes exist at all, and if so, whether they are sufficiently pathognomonic to deserve the name of "specific alterations."

The author refers to the results of Hecker's researches regarding structural abnormalities in the various other organs of the syphilitic foetus and new-born. He showed, as had likewise done those who preceded him, that in congenital as in acquired lues, the virus attacks essentially, the interstitial tissue and only secondarily the parenchyma of the organs. He grouped the lesions as follows:

1. The characteristic vascular changes.
2. A diffuse small-cell infiltration.
3. A circumscribed agglomeration of round cells forming the so-called miliary syphiloma.
4. Circumscribed and diffuse connective tissue proliferation.

The author's personal researches comprise examination of about fifty brains taken from all periods between the third foetal month and a few months after birth. The majority (thirty-eight) were from foetuses between the fifth month and full term.

The preparations obtained from all of these were from children in whom congenital lues was positively demonstrable.

According to Hecker's investigations about seventy-five per cent. of all premature births are of syphilitic origin; the proportion, therefore, becomes still greater in Ranke's statistics, in which about forty of the cases range from the third to the eighth month. Moreover, many of the lesions observed in those cases of undeniably luetic character were likewise to be seen in a fair number of the other preparations.

As regards macroscopic appearances, only very rarely did lesions present which could be regarded as essentially attributable to a syphilitic process. Still, special mention must be made of the occurrence of hemorrhages in the pia and brain-substance, especially in its deeper portions, which, in four cases, were plainly appreciable with the naked eye, and which, microscopically, were found in all of the eleven cases. In this connection it should be mentioned that Arnold Heller and his pupils consider these hemorrhages to be an important, if not the great cause of death, which so frequently occurs in syphilitic children just at the time of birth, as well as the cause of the pedal atrophy. Also to be remembered, is the opinion of Mrácek, who, like Behrend, concludes, from a very large number of observations, to the special hemorrhagic diathesis of the syphilitic new-born: "a true syphilis hemorrhagica neonatorum." The present writer's experience is that in the prematurely-born, especially from the fourth to the sixth month, hemorrhages are practically never wanting. These extravasations are found often in large numbers and as extensive patches, beneath the cerebral pia and in the substance of the cortex, but are especially abundant in the deep white matter; they also occur in the brain-stem, not infrequently in the choroid plexes and then occasionally fill entirely the ventricular cavity. Most frequently we have to do with recent hemorrhages having occurred at the time of birth. Although such lesions were also found in children born at term, they are extremely rare at this stage of development under normal circumstances, i. e., in non-syphilitic cases, when they are almost invariably the result of difficult and protracted labor or of instrumental delivery.

As the common cause of these hemorrhages both in the early foetal stages and in the luetic new-born, certain peculiarities in the vessel-wall seem to stand in the foreground.

Until about the seventh and eighth months of foetal life and under normal circumstances, the capillaries and precapillaries, as seen in anilin-stained preparations (Thionin, but preferably Toluidin blue), appear as thick protoplasmic richly-nuclear tubules, densely studded or beaded throughout. First at term do they present in a certain measure, the characteristic appearance of the capillaries of the adult. In full-term luetic children were embryonal types almost always observed. Whether such a fact indicates developmental error or represents the result of irritative inflammatory processes, is difficult to say. Most probably how-

ever, have we to do with the persistence of a normal proliferative process occurring earlier in foetal life, owing to the influence of inflammatory irritation.

It must be said, moreover, that absolutely similar embryonal characteristics have been observed about the smaller blood-vessels in many cases of acquired lues, as has been well described and pictured by Alzheimer.

The vascular changes in congenital lues however, are not confined to the capillaries; in many cases, were notable alterations likewise observed in the arterial-wall, more particularly in the intima (endothelial proliferation, occasionally also, shedding of endothelial elements; furthermore, vacuole-formation in the muscularis and not infrequently adventitial hyperplasia) and also well-marked proliferative and degenerative processes in the pial veins.

More particularly appreciable in the latter was the desquamation of swollen megalonuclear endothelial cells which had already developed in the arrested blood-stream active macrophagocytic functions.

The pathologic changes in the brain-substance proper can be most favorably studied in the immediate vicinity of the vascular alterations just noted, and evidently stand, in good part at least, in direct causal relationship with them; thus showing that the diseased vessel-wall has afforded ready egress to the exciting agent of syphilis and to its toxic principles.

In several cases, extensive leucocytic infiltrations were observed in the peri-vascular lymph spaces. In the majority of them, the predominating element was naturally the plasma-cell, but in two cases, numerous "mastzellen" were likewise to be seen. The origin of the infiltrating elements from the blood-stream, could, in the author's cases of congenital lues, be ascertained without difficulty, as these very cells, together with a certain admixture of immature forms, which morphologically become transformed later into the proportionately by far predominating element of embryonal blood-stream (*i.e.*, the mono-nuclear leucocyte), were those which, in greatest numbers, filled the lumen of the infiltrated vessels.

As is well known, analogous infiltrations (lymphocytes and plasma-cells) constitute a significant proportion of the pathologic changes encountered in certain forms of acquired lues, as well as in general paresis. But, whereas in the adult brain these leucocytic infiltrations tend to confine themselves strictly to the domain of the lymphatic sheaths (as Nissl and Alzheimer have shown), do they show, in the central organs of the new-born, a marked tendency to spread further and invade the neighboring parenchyma. Furthermore, it can be said as a conclusion, that this tendency is all the more marked, the earlier the period of development under consideration.

In two foetuses of about the sixth month (and presumably not luetic), a very extensive infiltration of the vessel-wall was observed, with plasma cells in the one, with large polymorphonuclear elements, probably of endothelial origin, in the other. From the vicinity of the blood-vessels, these infiltrations spread out over considerable areas of the brain-substance, having, in the second case, traversed the entire cortex and invaded the subjacent white matter.

The author believes that the infiltrating process takes place only in the latter stages of intra-uterine life, certainly not before the sixth month, as the elements, although they spread beyond the lymphatic sheaths, nevertheless confine themselves to the immediate vicinity of the blood-vessels.

Much deeper into the brain-substance than the leucocytic infiltration reaches another process likewise originating from the vascular system: desquamated adventitial elements, which correspond, both as regards configuration and dimensions, to the "Stäbchenzellen" described by Nissl and Alzheimer in connection with general paresis, were to be seen in large numbers in the cortex and subcortex in several cases. That this feature is of pathologic significance can be asserted on the ground that it is wanting entirely in the brains of normal new-born.

Equal in intensity to the above-described changes is the proliferation of the ectodermal tissue which constitutes the supporting framework of the organ. Large glia-cells rich in protoplasm and often showing a tendency to form a fibrillar network, were found in large numbers about the blood-vessels, sending their thick cell-processes towards the walls of one or more of them. A diffuse gliar hyperplasia was also occasionally observed in the centrum ovale, more particularly in the vicinity of the ventricle, and in three cases, a marked gliar proliferation was noted in the sparsely-cellular marginal zone as well as in the deeper layers of the cortex; the latter process usually presenting at those points where the overlying pia itself showed most extensive alterations.

Well-circumscribed focal processes were also observed, appearing as small yellowish points appreciable with the naked eye, and which, in stained preparations under the microscope, were seen to consist of plasma- and mast-cells, of the previously described "Stäbchenzellen" (small rod-like cells) of adventitial derivation, of markedly hypertrophied gliar substance and of broken-down remnants of all of these elements.

Wherever in the cortex such foci existed were marked degenerative changes in the nerve-cells also noted. Usually, a delicate vascular twig with extensively altered walls and often an occluded lumen could be seen, either in the very center of these foci or else in close proximity to them. A point to be noted, is that the author has never been able to detect in the nervous elements neighboring upon these "proliferation-islands," any sort of alteration which could properly be designated as an "active reaction."

Focal processes of a totally different type were found in three cases. They were constituted by the dense micronuclear cells of embryonal connective-tissue (the so-called "spongioblasten"), which normally, in earlier foetal periods, abundantly surround the large veins which take their origin from the plexes and radiate into the ventricular walls; a finding which might easily be regarded as a leucocytic infiltration about the deeper blood-vessels. In those cases of unquestionable congenital lues in which this perivascular proliferation zone had, corresponding to normal evolution, retroceded for the most part, were well-circumscribed agglomerations of these elements, nevertheless still to be seen in the vicinity of the veins and sharply outlined against the richly-cellular neighboring tissue-structure. Again, much due consideration be given to the pial

alterations, which, in many cases are appreciable even macroscopically, consisting in thickening and opacity of the membrane and in adhesion between the pia and dura mater. As already stated, pial and subpial extravasations are not uncommon. In two cases, recent and very pronounced changes of a more complex nature were observed, consisting in marked fibroblastic proliferation, infiltration of the pial meshwork with plasma-cells, giant-cell formation, and in a few isolated spots, actual necrotic disintegration. It was exactly in both these cases that the pial hyperplasia invaded most extensively the subjacent cortex, leading to migration of fibroblasts and adventitial elements into the sparsely-cellular superficial cortical layer, and giving rise therefore, only to a more accentuated degree, to the previously-described cortical alterations: hypertrophy of vessel-wall, infiltration of perivascular lymph-sheaths, migration of the so-called rod-like cells, gliar hyperplasia and disintegration of nerve-cells.

Of particular interest, in the author's opinion, is the infiltration of the pial meshes with characteristic, often multinucleated large round cells, which were wanting in none of his cases of hereditary syphilis. The origin and significance of these elements is not yet clearly apparent, but they are evidently very closely related to the normal developmental processes of the pia. They were found in all of twenty-nine cases of premature birth between the fourth and seventh months; in increasing numbers up to the sixth month and then in decreasing numbers. In perfectly normal children born at term, they were either totally wanting, or else found only in very exceptional instances. The fact that these elements are found invariably in great numbers in fully-matured syphilitic new-born, is unquestionably to be regarded as a pathologic feature, and one which, like the vascular thickening and the formation of spongioblastic nodules, is to be explained by the persistence of a normal (*i.e.*, at some earlier period of foetal development) proliferative process, probably due to the irritative influence of the luetic virus.

Finally the author has investigated by means of Marchi's method and the more recent fat-staining reactions, the question of the presence or absence of lipoid substance in cases of congenital syphilis. His results were in direct contradiction with the views held by Virchow and supported by Jastrowitz. Fatty bodies were present (just as they are in the normal embryonal brain) in the large round cells, in the vessel-wall and in the pathologically hyperplastic fibroblasts of the pia; aside from this, they were abundant in the walls (endothelial lining and adventitial coat) of the cerebral blood-vessels, occurred in clumps within the perivascular glia-cells and, here and there, within isolated gliar and adventitial elements scattered through the parenchyma. Occurring as abundant local deposits fatty substance was observed only in connection with the above-described foci consisting of migratory plasma-cells, adventitial elements and hypertrophied neuroglia.

In terminating, the author briefly discusses the occurrence of the *Spirochaeta pallida* in the preparations. The first demonstration of the organism in the tissues was made by Levaditi by means of silver impregnation. The experiments of Metchnikoff and Roux upon monkeys, as well as of Neisser and Finger, have revealed the presence of the *Spirochaeta* both

at the seat of inoculation and in the lesions of the secondary stage. The organism was particularly abundant in the primary lesion of acquired syphilis and in almost all of the organs in cases of hereditary syphilis; in the latter category, the spirochaeta were especially numerous in those lesions which were formerly regarded as analogous to the tertiary gumma of adults.

Up to the present time all attempts to detect the spirochaeta in the central nervous system of hereditary syphilitics had remained fruitless. The researches of Levaditi (examination of brain, spinal cord, spinal ganglia and plexes), upon the organs of the luetic new-born, of Bosc (examination of one brain) remained unsuccessful. The author corrects this statement in a foot-note, where he recognizes that Simmonds found the spirochaeta pallida in the brain in congenital lues, and Benda, likewise, in a case of bilateral softening of the cerebral hemispheres associated with syphilitic endarteritis and mesarteritis. Furthermore, it has been found that already in 1905, Schridde had demonstrated the presence of the organism in the cerebro-spinal fluid of a congenitally luetic new-born.

In two of the author's cases in which the most extensive lesions were present, Levaditi's method was employed and spirochaeta were found in large numbers; in both distribution and number they coincided with the previously described lesions. They were to be seen in the vessel-wall as isolated organisms beneath the closely-packed leucocytic elements of the blood-vessels, especially of the veins, insinuating themselves between the hyperplastic and degenerated endothelial cells; rarely occurring within the muscularis of the larger arteries, but in large numbers, however, in between the adventitial connective-tissue strands where they seem to multiply most actively. The pia in certain places appeared considerably darkened from the presence of large numbers of spirochaeta, more particularly at such points as were the seat of destructive cellular processes. In one instance, the author observed what appeared to be degeneration products of spirochaeta within a large round cell of the pia; a finding which had already been reported by Levaditi and by Frohwein.

At certain points where the pial alterations directly involved the cortical substance, isolated spirochaeta also penetrated into the brain tissue. They were much more abundant in the lymph-sheaths of the thickened and infiltrated cortical vessels whence they invaded, occasionally in groups of from five to seven the adjacent nervous tissue. They were especially numerous in the lymph-sheaths and in the parenchyma of the medulla oblongata in one case, in which this region was the seat of an extensive and diffuse gliar hyperplasia. The previously described nodules constituted by mural cells, leucocytes and hyperplastic glia, were literally choked with spirochaeta, so that even with a low power they were discernible as dark points disseminated through the brown-stained tissue-substance.

LASALLE ARCHAMBAULT.

ALBANY MEDICAL ANNALS

Original Communications

ON THE CHARACTER OF THE STATE BOARD EXAMINATIONS AND THE COMPETENCY OF STATE MEDICAL EXAMINING BOARDS.*

By WILLIS G. TUCKER, M. D.

It is a somewhat surprising fact that the competency of state medical examining boards has seldom been questioned, and that so little attention has been paid to the methods by which the members of these boards are selected. If it be asserted that, under existing conditions, an examination is the only practicable method for determining the competency of candidates for license to practice medicine, it is evident that the examinations should be carefully, fairly and skilfully conducted, and it is indeed surprising that, at a time when criticism of the colleges is so common, we should find so little attention paid to the nature and scope of the examinations, and so much importance attached to the results obtained. Is it not obvious that unless these examinations are fairly comparable, and a uniform method of marking is adopted, the results in different states must vary widely, so that no reliable conclusions can be drawn from them. Under existing circumstances a man's competency and his right to practice may largely be determined by geographical necessities.

The laws regulating medical licensure in the different states vary widely and the standards which have been adopted by different boards are far from uniform. In many states there is but one board; in a few there are two; in others, three; and in still others the responsibility is vested in the State Board of Health. The examiners are appointed in a variety of ways and no tests

*This short paper was prepared by request for the Fourth Annual Conference of the Council on Medical Education of the American Medical Association held in Chicago, April 13, 1908.

to determine real fitness are ordinarily applied, but positions are not infrequently obtained through favor, or by self-seeking individuals who have regard to the emoluments of the office which are sometimes considerable. A competent board should be composed of *experts* and men skilled in teaching but such is seldom the case. If it is remembered that the graduates of most medical schools are required to pass a series of examinations covering a period of four years, and to reach a certain prescribed standard determined by a combination of many marks in many departments with other tests, shall it be said that if a faculty of professed teachers and experts find a candidate for degree competent they are in error because a board of non-experts arrives at a different conclusion as the result of a single series of exclusively written examinations. I do not think that this can be fairly asserted, and if not, then the results of state examinations are not properly to be regarded as conclusive, and inferences drawn from these results as to the value of the work done by the colleges and the competency of their faculties should not be accepted as convincing.

Let it be said most distinctly that I have no desire to bring a general charge of incompetency against the medical examining boards of this country. Most of the members of these boards are probably discharging their very responsible duties to the best of their respective abilities, but I am clearly of opinion that these boards should be composed of men expert in their several departments and skilled in pedagogy. If necessary to select them from the faculties of the colleges their compensation and tenure of office should be such that they would be willing to resign their faculty positions, for no member of an examining board should be connected with a medical school. If the difficulty of securing the services of such examiners be urged it can only be said in reply that none others are competent, and that it is clearly the duty of the state to secure the services of competent examiners regardless of cost or any other consideration.

To enter into a general discussion of the character and scope of the licensing examinations as now existing in the different states would require much time and more knowledge than I possess and is beside my present purpose, but I should like to bring to your attention a single paper set at a recent examination in a great state. It is in chemistry and is as follows:

1. What is valency?

2. What characteristic reaction would ozone or hydrogen dioxide have on potassium iodide?
3. Complete this formula (*sic*):— $\text{Na}_2\text{SO}_4 + 2\text{C} + \text{CaCO}_3 =$
4. What is formed by treating hydrochloric acid with manganese di-oxide?
5. Complete this formula (*sic*):— $\text{K}_2\text{O}_3 + 2\text{C} =$

I have been engaged in teaching chemistry in a medical school and elsewhere for over thirty years and have no hesitation in saying that this paper is entirely inadequate and absolutely worthless as a test of a man's knowledge of chemistry as related to medicine, and in determining his competency to practice medicine. Only two of the questions, the second and fourth, have any bearing upon medicine, and while the fourth is simple enough it is comparatively unimportant for the reason that chlorine is not ordinarily generated on a large scale in the manner specified. The first question might be retained if the number of topics had been greater, but to give so much weight to a matter like valency in a *medical* examination is entirely unjustifiable. The third question has to do with the chemical changes taking place in the manufacture of soda-ash by the old process and while proper enough in its place is of no more interest or importance to the student or practitioner of medicine than the canals of Mars. The last question assumes the existence of an oxide of potassium that I never heard of and which has, I believe, no existence. The examiner had in mind the reaction taking place in the manufacture of metallic potassium which I conceive to be a procedure as far removed from everything medical as the manufacture of furniture polish or shoe-blackening. This paper may be objected to on the lawyer's grounds,—that three-fifths of the questions are incompetent, immaterial and irrelevant. The possession of such information proves nothing as to medical competency and the lack of it should be allowed to debar no man from securing his license. I doubt whether one member in ten on our state boards, save perhaps the examiners in chemistry, could get forty per cent. on such a paper as this. It was published in the *New York Medical Record* for February 15, 1908, at page 293, and has been verified by comparison with a copy of the original paper which was kindly sent me by the secretary of the board.

Now the failure to pass such an examination as this would insure the rejection of a candidate in most of our states. Is it not time that we had some discussion of a matter of such grave

importance as this. If men are to be rejected by our state boards because they cannot get the required number of credits on such papers it is time that the profession should know it, and the people understand it, that they may go to their legislatures and secure the enactment of better laws. Members of various boards have recently been emphatic in their condemnation of the colleges and of the medical curriculum as it is supposed to exist. It may be asked of these critics with propriety whether teachers of chemistry like myself are to take such a paper as I have cited as indicating the subjects which the state boards consider should be taught in the medical schools. The influence of the boards upon the schools will be baneful unless the members of these boards have such wisdom, sound judgment and discretion as fits them for the proper discharge of their very important and responsible duties. The examining and licensing boards stand over the colleges and if it is the duty of the colleges to fit men not only to enter upon the practice of their profession, but to qualify them to meet the requirements of these boards, it is evident that the colleges are badly handicapped in their work unless there be a substantial agreement between them and the boards as to what should be taught and how their instruction should be given. There is no such agreement at the present time, but on the contrary one board requires an applicant to pass such an examination as might reasonably be demanded of a general practitioner who has had the kind of experience which no man can acquire in *any* school, and another places before him examination papers which deal with the ordinary foundation principles as they are laid down in the text-books commonly employed. It is impossible for the colleges to prepare their pupils to meet all of these many, varied and constantly changing requirements, and any system of instruction which has for its end and chief aim the preparation of men to *pass examinations* is vicious in principle and sure to sink to a mere process of cramming.

There has never been a time when the medical schools in this country,—and I speak more particularly for the east and especially of those in my own state because I know more about them,—were so well equipped, or doing such thorough work as at the present, and yet they have never been so frequently condemned. This is much to be deplored for it is unsettling to public confidence and tends to diminish the respect in which a great profession is held. No part of our educational system is perfect

nor ever will be, and the same charges now brought against the medical schools might with as much reason be made in the case of our common schools, high schools, colleges and technical schools of every kind. They are largely unreasonable because based upon the assumption that any educational method ever devised can impart a perfect and complete training in any field whatever. If such conferences as this succeed in bringing about a better understanding between the official boards and the colleges, and particularly if they result in securing the adoption of more uniform and satisfactory tests for determining the qualifications of applicants for license to practice, those who take part in them will not have labored in vain.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
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(Continued from June Annals, page 497)

CHAPTER XII.

"Chance and change are busy ever,"—than which: truer words were never spoken. Our lives are not to-day what they were yesterday. We have met different people, and we have spoken and heard words that have had an influence. Some duty has been done or neglected; some temptation yielded to or overcome. No day so uneventful; but there is some change for us all. We may vary the pattern; but we cannot stop the loom, until the web runs out.

What change are the passing months bringing to Ruth Campbell? Apparently, nothing in her favor; pointed out to visitors

as a curiosity,—a very peculiar case. Will the tide turn in time,—or must she suffer until death breaks her bonds? She mourned for her friend Maggie. The attendants took good care of her, but there was this difference; with them it was a matter of dollars and cents,—the work they were paid for doing, while Maggie's care was a free, heart offering, and that, to Ruth, meant that some one pitied her.

Perhaps Johanna divined something of this; for she surprised those around her, one evening, by taking Ruth by the arm and leading her in a somewhat energetic manner to the side of her bed. If Johanna's face was stern, her hand was gentle as she removed Ruth's clothes, put on her night-dress, and placed her in bed; then taking her hands, she crossed them upon her breast, and bending over her, she made the sign of the cross three times, saying as she did so: "Father, Son, and Holy Ghost. Amen."

Ruth did not fully understand the significance of the ceremony; but she felt it was a petition for God's love and peace, and, in a measure, the answer came.

It was whispered in the sitting room that the doctor in charge of the ward had married and was going away. With regrets, was mingled curiosity as to who would take his place. They did not remain long in doubt, for the next morning when the doctor visited the ward, his successor was with him. They passed from one to another conversing in low tones. "That's the new doctor," went around the room, as the door closed behind them.

"The old doctor's good enough for me," said Mrs. Griggs, "the dear man, whatever I'll do when he's gone, I'm sure I don't know. We'll not be getting another as good as he," and she wiped away some imaginary tears with the corner of her apron.

"Shut up, you old goose," said Nora saucily, "you hav'n't given him a bit of peace with your fault-finding and your grumbling, and now you're whining because he's going away."

"Blessings, brighten as they take their flight," said another.

"Bad luck to the day that brought the likes of ye on this ward, with yer Frinch airs and yer ignerance," said Mrs. Griggs, turning angrily upon Nora; "Who's made him more trouble than yourself, with yer knife stalin and yer wickedness? Don't ever be spakin to me agin. Oh! it wasn't like this in the other hospital. Shure, the doctors there always treated me with the

greatest respect. They were gentlemen, and could tell a dacint person from such as ye." Marching to and fro across the room, she cast looks of scorn upon Mrs. Nora, who stopped singing "I want to be more like Jesus," to sympathize with Mrs. Griggs, because her ladyship couldn't go where she could be called "dacint." Meanwhile, some of the more quiet patients discussed the situation, but gradually the subject was dropped, and when after dinner the new doctor passed through the ward, the change became an established fact.

Ruth felt but little interest in the matter. Believing, as she did, that the doctors had conspired to torment her, she had no confidence in them. By tricks of legerdemain, with batteries, and in other ways, they tortured her; often sending cold chills over her; and sometimes they paralyzed her so that she could not stir. Why should she expect anything different from this man?

Nevertheless, when, stopping near her to converse with an attendant, Doctor Field placed his hand upon her head, and gently stroked her hair; a point was gained, although so small that neither one knew it. It was thoughtlessly done and therein lay the magic charm.

It is not the studied kindness, the departing from the natural way that is most effective, for behind that lies a motive; but it is kindness springing spontaneously from the heart like water from a spring, because it is there and must have an outlet that is irresistible.

Ruth opened her eyes one morning to see a new face near her bed, a girl, some seventeen years of age, with fresh complexion, brown hair and eyes, and in size somewhat overgrown. She was no other than our old friend Mary from the industrial school. She returned Ruth's gaze with a half-defiant, half-amused expression, and they were introduced, although no word was spoken.

Mary soon became quite an important member of the sitting room family; great kindness being shown her because she was so young. Everything was harmonious for a while, but soon a cloud appeared. Mary looked in the glass and muttered, and all efforts to please her were vain. In a short time, the quiet, pleasant girl was transformed into a maniac, breaking glass as fast as her hands could go through it and tearing her clothing. When the attendants interfered, they found it was to their cost,

as the scratches and bites they received bore witness. She had the strength of a man at any time, and in her insane moods she was terrible. She was placed in restraint and removed to a ward where the patients were more violent.

Doctor Field's genuine kindness of heart prompted him to make an effort to better Ruth's condition, although he did not see much chance for her recovery. When he visited the ward, he always spoke to her, and, although she gave no signs that she heard him, not another patient on the ward would have missed his pleasant "good morning" so much as she.

He noticed that she did not retain the food in her stomach, and he tried various ways to oblige her to do so. For a while, her head was held back after she was fed; but it did not have the desired effect, and he tried exercise, having her walk up and down the hall with an attendant, but all to no purpose.

One pleasant morning, the doctor gave orders that Ruth should be taken for a walk in the grove with the other patients. "The fresh air will do her good," he said; "put on her hat and have her go."

Ruth heard, and her heart beat wildly. She had not forgotten the last time that she was out. She remembered the crowd of strange, jibing creatures that she had seen and the terrible thing that had happened. Still she had not the courage or the power to refuse to go. Her limbs shook so that she could hardly walk. She sat down upon the stairs, and the girls were obliged to carry her.

The grove was a very different place from the yard where Ruth had seen the violent patients. There were beautiful shrubs and trees, hammocks, and seats in shady places, swings and croquet for those who cared for them. Patients from other wards were there with attendants to care for them. As might be expected, among so many, in such a place, some were disorderly, causing their attendants some trouble; some were grouped together chatting pleasantly, while others wandered gloomily alone. Friendships were formed here, as in the world outside, and relief was found by confiding sorrows one to another. Hospital affairs were discussed, the merits and demerits of doctors, matron, and attendants.

Ruth sat blind to all this. She was in a state of great mental excitement. The sun shone brightly upon her, as though saying, "Don't you know me Ruth? Rouse up and welcome me!" but

her thoughts were wild and troubled, and her old friend could not cheer her as in days gone by. With her memories, her fancies, and her fears, the hour in the grove was one of great mental suffering for Ruth. Returning to the hall, she sank down upon the stairs and was carried the remainder of the way. When bedtime came and she was lifted to her feet, she fell upon the floor. From that time, she was helpless. Dressed and lifted into a chair in the morning, she remained there until night, when she was put into bed again. Thus the time passed on. Physically she had not lost the use of her limbs, but she was overpowered, prostrated; hope had failed her. Her troubles were too great, and she had completely surrendered to them.

CHAPTER XIII.

Sometimes it became necessary to make beds upon the floor of the sitting room, either because there were more patients than usual, or some one needed to be kept near the night-watch.

One night, Ruth was startled by a heavy crash. Opening her eyes, she looked through the door into the sitting room. Mrs. Bahr, a German woman, stood upon the lounge where she had been lying. Three large pictures in heavy frames hung over the lounge. She had thrown one, the second followed, then the third. Her wild eyes were fixed upon the night-watch, who stood helplessly watching the maniac. "Discretion being the better part of valor," she did not interfere. The noise aroused the attendants who slept near by, and they hastened to the rescue. Mrs. Bahr wore a jacket the remainder of the night, and, in the morning, she was removed to another ward.

In her place came a young woman who imagined herself a cat. When allowed to sit upon the floor, she was best contented, and she preferred milk as an article of diet. Like most felines, she was inclined to scratch when meddled with. In an adjoining ward was a patient who called herself,—“Biddy the Rat,” a delusion which caused great suffering. The doctor pleasantly remarked that it might be advisable to remove the cat into another ward.

Occasionally, Mrs. Griggs allowed her indignation to overcome her judgment. At such times she often broke a window or dish whichever was most convenient. The doctor, thinking

best to punish her, gave her a very powerful opiate. The effect was far from pleasant, and poor Mrs. Griggs was an object of pity when the awakening came. For quite a while afterward, she was very docile, but she transgressed again, and the doctor tried the effect of imagination by injecting a drop of water into her arm instead of the opiate. Telling the attendants to watch her, he said, "We will see what the effect will be."

Mrs. Griggs remembered what she had suffered before and groaned accordingly. "I'll niver live to get out of this. Bad luck to that murderin doctor. I'll have to go to bed. It's fearful sick I'm getting." Lying down upon the lounge, she tried hard to sleep, but, failing to do so, she arose and walked the floor again. The attendants joked a little about the medicine. "Ah well," said Mrs. Griggs; "he has given me a larger dose this time, and it takes longer to work. I'll be feeling it to-morrow sure enough."

After Ruth became helpless, she remained in the dormitory, sitting through the day near by the bed where she slept at night.

Upon a bed close by, was a patient who had become insane upon the subject of "faith cure," refusing both food and medicine. All day long, she would lie motionless, gazing upward with a fixed look.

One morning when the doctor came in to feed his patients, he brought with him a box. When he placed it upon the table, the brass handles fell upon the lid with a ringing sound, which Ruth noticed.

"Perhaps after I use this battery upon them they will be willing to take their food," said the doctor to Miss Ray, the Supervisor, who assisted him. They used it upon Sarah first. Her groans and sobs, made Ruth tremble with fear. She was willing to die, but she shrank from pain that would not kill.

"Now Ruth,—It is your turn. I think you understand what I say. It is better for you to take your food voluntarily, and if you will drink this milk, I will not use the battery upon you, otherwise, I shall."

Ruth heard, but she remained dumb and motionless. They pressed a glass of milk to her lips. She closed them tightly. The battery was applied, light at first then with more power, until she screamed with pain. "We will try her feet," said the doctor, "it may start the circulation." Miss Ray removed Ruth's slippers and stockings, and the battery was applied to her feet.

She could bear that better, although it seemed to be drawing the cords out of her limbs.

"There,"—said the doctor, "We will call that enough for this time, but you had better decide to take your food; for if you do not, I shall use it again to-morrow."

The doctor was true to his word. For several days in succession, he applied the battery, until Ruth listened in terror for his coming and for the sound of the handle, dropping upon the box. One morning, he seemed more determined than usual, using the battery, seemingly, without mercy, until, screaming with pain, Ruth slid from her chair to the floor. She was then carried to a room where the other patients could not hear her cries.

"I will make you drink this milk, if it takes all day," said the doctor. Ruth clung to Miss Ray in a mute appeal for help.

"Oh doctor," came in tones of sympathy from the assistant.

"No, Ruth, she cannot help you," said the doctor sternly. "I shall be glad to stop when you do as I ask you, for I do not like to hurt you."

Miss Ray placed the cup to Ruth's lips, urging her, kindly, to drink, but she still refused, and again she was tortured. She grew weak and faint; and only, after a shock that seemed to cut her fingers from her hand, when the cup was placed to her lips, she slowly swallowed the contents. They carried her back to her ward, and the doctor said, as he left her; "Remember, you must drink some milk at noon time, and more at night."

At noon the milk was brought. At first, Ruth declined; but, after urging and a promise that she need drink but one cup and with the memory of the battery fresh in her mind, she yielded, only to mourn, because she had been so weak as to do what would prolong her wretched, useless life. She reasoned that it was right for her to end her life. "My case is an exception," she thought, "for which no provision has been made. People live to grow old unless disease or accident carries them away. It is not right for me to be a burden and I ought to die."

When the doctor passed her in the morning he said, "I am in a hurry now, but I will be in later."

All day Ruth listens for his coming, sick and trembling with dread. She hears his step, and tries to nerve herself for the unequal contest. He comes near her and stops. She does not

hear the handle fall upon the box which contains the battery! He has not brought it! God be thanked!

After that, Ruth was fed as before, and the battery was not used upon her again. Some weeks later, a visitor passing through the ward noticed Ruth and made inquiries about her, remarking that it might be a good plan to use a battery upon her.

"I have already done so," replied the doctor, "and I will not use it upon her again. She is too helpless, and I pity her."

Was Ruth dreaming? No! She heard him say these blessed words, and what was more to her, she was sure that he meant them. He was not in league with the others against her. She listened to, and weighed every word that she heard him speak, and she believed he was truthful. He had already helped her more than she could know.

It happened that a patient threw a tumbler, and broke it. A tiny bit of glass fell into Ruth's lap. It had been a long time since she had held anything in her hand, and it required an effort to pick it up; but she did so, thinking she might cut a vein in her arm with it.

The thought came quickly, "They know what I am planning to do, and they will watch me." That delusion always restrained her. She kept the prize between her thumb and finger, hoping that she might have an opportunity to use it. It chanced that more patients were brought in that night, and a bed was made upon the floor for Ruth, because she would find no fault; Ruth thought, she was placed there so that the night-watch could jump upon her if she used the glass. In the morning it was missing, and her chance was gone.

A new attendant was taking her turn in the sitting room. She was a middle aged woman, and, evidently, was not a favorite with the others, having, as they said, "queer notions." She was very kind to Ruth, bringing a shawl of her own to wrap around her, and placing a cushion at her back. She gave her nice sponge baths, and in various ways, made her more comfortable.

Her stay was of short duration, for she could not remember to be careful. Dr. Field found her scissors lying upon the window seat, and, calling her into the dormitory, where Ruth was sitting, he closed the door and said, "I suppose these scissors belong to you, Mrs. Kemp?"

"Yes sir," was the reply.

"I am astonished that a woman of your age should be so careless. There is not a patient here that can be safely trusted, and you have been told that you must not, even for a moment, leave anything of the kind in the room."

"I will own that I forgot for once," said Mrs. Kemp.

"But this is not your first offence. I found your bunch of keys on a bed near Ruth Campbell."

"Yes, I know you did, but there was no one in the dormitory at the time, who would touch them?"

"How do you know that Ruth might not take it into her head to open the doors and go out?"

"Why! that is impossible, sir. She has not taken a step for months, and she sits with her eyes closed most of the time, a poor helpless creature."

"You forget, Mrs. Kemp that you cannot tell what insane people will do. Mrs. Campbell has done some very strange things since she has been in the building. You had better go down to the office and see Dr. Hale. I think you are too forgetful to retain your present position. I am sorry this has happened, but my responsibility is great, and you will have to go."

CHAPTER XIV.

In Mrs. Kemp's place came one, who, if she was not fair, was certainly forty. Doubtless she intended to faithfully discharge her duties, although some of her ideas, in regard to the welfare of the patients, would not have conformed with the doctors.

Miss Reeves was a spiritualist, and she claimed to be a medium. I do not propose to discuss a subject, which has puzzled so many who are wiser than myself. I love to think that my dear ones whom I cannot see, are with me, and sometimes they seem so near, I reach my hands to touch them; but, listen as I may, I cannot hear them speak. I am content to wait, striving to live in harmony with them so that when my ears are opened I may quickly catch the whisper.

Miss Reeves talked quite freely of her religious belief, and, finding a number of interested listeners she proposed forming a circle around the table. "We shall be likely to hear raps," she said, "and perhaps the table will move." Some were anxious to try, while others needed urging, but the circle was formed.

(To be continued)

ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE—THIRTY-FIFTH ANNUAL MEETING.

The thirty fifth annual meeting of the Association of the Alumni of the Albany Medical College was held in the amphitheatre on Tuesday, May 19, 1908. The usual informal reception was held in the college library, where photographs were exhibited, greetings exchanged and ballots cast, between the hours of 9 and 11 A. M. A photograph of the members of the Association on the college steps was taken and the meeting was called to order by the President, Dr. Thomas H. Willard ('87), of New York City, at eleven o'clock.

The following named members of the Association, with invited guests, students of the college and others interested, were present: E. B. Boyce, A. De Graff, ('58); H. Bendell, A. Vander Veer, ('62); A. B. Husted, ('63); C. E. Whitbeck, ('66); A. B. Bowen, D. S. Fairchild, Schuyler Lott, N. H. Mesick, C. F. Scattergood, ('68); W. H. Murray, ('69); D. C. Case, W. G. Tucker, ('70); J. K. Thorne, G. L. Ullman, ('71); J. H. Blatner, J. K. Thomas, ('72); H. E. Mereness, ('74); T. K. Perry, ('75); Jesse Crounse, M. J. Lewi, M. M. Lown, ('77); F. H. Brewer, J. H. Cotter, E. D. Fuller, C. A. Ingraham, G. P. K. Pomeroy, W. O. Stillman, ('78); E. A. Bartlett, W. J. Nellis, ('79); F. Beebe, F. L. Classen, J. H. Mitchell, ('81); W. E. Deitz, A. Y. Myers, Wm. B. Sabin, J. B. Washburne, ('82); G. A. Bradbury, R. J. Dimon, M. J. Dwyer, I. D. LeRoy, H. L. Odell, J. W. Poucher, Theobald Smith, C. F. Wharton, ('83); Robt. Babcock, G. E. Swift, ('84); T. P. Scully, ('85); A. J. Blessing, E. E. Finch, ('86); W. G. Macdonald, A. MacFarlane, Chas. H. Moore, T. H. Willard, ('87); C. F. Clowe, M. Keenan, F. H. Lee, G. G. Lempe, E. E. Potter, ('88); G. E. Lochner, J. M. Mosher, ('89); F. M. Clement, Thos. H. Flynn, G. G. Lewis, ('90); L. Le Brun, A. B. Van Loon, ('91); LeRoy Becker, John T. Cahill, P. J. Fagan, G. M. Fisher, R. A. Heenan, H. E. Lomax, L. H. Neuman, C. F. Theisen, ('92); H. E. De Freest, T. W. Jenkins, T. A. Ryan, G. H. Van Gaasbeck, P. G. Waller, ('93); C. Bernstein, W. H. George, W. McKown, A. Sautter, ('94); C. S. Butler, F. W. Cordes, D. R. Kinloch, C. L. Myers, ('95); E. J. Collier, G. V. Johnson, J. C. Sharkey,

H. L. K. Shaw, ('96); Ira Applebee, J. J. Beard, C. G. Cole, F. R. Guyer, E. J. Hanratta, F. C. Leonard, L. McClintock, W. C. McCulloch, C. H. Richardson, W. E. Silcocks, J. A. Stevenson, C. N. Van Denberge, ('97); R. W. Andrews, A. R. V. Fenwick, D. J. Jenkins, E. P. Lasher, W. R. Miller, A. L. Newton, C. L. Prest, J. F. Rooney, C. W. Skelton, A. H. Traver, B. G. Troidle, E. A. Vander Veer, D. L. Vanderzee, W. H. Wood, ('98); A. E. Cordes, C. G. Hacker, E. E. Hinman, J. A. Lanahan, D. A. McCarthy, C. E. Shaw, G. S. Towne, ('99); Geo. Lenz, J. N. Vander Veer, (1900); A. J. Bedell, E. G. Griffin, J. M. Griffin, A. Holding, J. B. Neary, L. O. White, ('01); J. H. Gutman, C. P. Wagner, ('02); J. H. Branan, S. C. Clemans, F. C. Maxon, Jr., I. E. Van Hoesen, ('03); J. I. Cotter, B. K. De Voe, W. G. Keens, D. V. O'Leary, Jr., E. O. Stapleton, R. H. Van Denburg, ('04); M. J. Cornthwaite, W. M. Dwyer, C. W. L. Hacker, T. A. Hull, G. W. Papen, Jr., W. G. Rommel, H. Rulison, Hamilton Southworth, R. C. Waterbury, J. W. White, E. B. Wilson, ('05); R. M. Collie, F. C. Conway, F. F. Doescher, V. R. Ehle, P. W. Harrig, W. A. Krieger, W. A. Reynolds, J. L. Bendell, ('07); F. J. Barnet, J. A. Battin, S. P. Brush, C. B. Phillips, G. P. Pitkin, E. J. Riley, Herbert E. Sperry, ('08); J. P. Boyd, Henry Hun, S. B. Ward, (Hon.).

On motion of Dr. Tucker, the reading of the minutes of the last annual meeting was dispensed with and the minutes were approved as printed in ALBANY MEDICAL ANNALS.

The President introduced Professor Willis G. Macdonald, who delivered the following address of welcome on behalf of the faculty:

ADDRESS OF WELCOME.

DR. MACDONALD'S ADDRESS.

Mr. President, Fellow Alumni and Gentlemen:—By direction of the faculty mine is the duty and mine the pleasure to welcome you again to this old amphitheatre, rich in traditions inherited from illustrious ancestry, replete with pleasant reminiscences of your college days, honored in the honors you are winning in the work of the world and happy in the promise which the class of to-day holds out to maintain, the proud standard of this grand old institution.

To have so many loyal sons of the Albany Medical College with us on commencement day is a well-spring of felicity in which we all alike must find delight. It proclaims your loyalty. It tells of your love, your

pride in this old school. To the faculty it pays a compliment beyond compare—the compliment of your approval and your co-operation.

Your presence as Alumni lends to the ceremonials of the day a substantial dignity which no other source could substitute or afford. It is a sign of vigorous life in this old school of medicine. It is an attestation of that spirit of unity, of that devotion to Alma Mater, of that continued interest after graduation, of that enthusiastic support—which to a college are assets more valuable than gold; more beneficent than princely endowments; more potent than costly halls, fanciful buildings or other theatrical emblazonments so common elsewhere now in the educational world. Walls of granite never yet made a college. Neither did marble halls. Years ago Thomas Carlyle branded them as fatuous tools in the making of an education. All that Carlyle contended for, and even more have we here in this old amphitheatre. We have the books, we have the men, we have the spirit too that tends to draw out all that is in a man and to make him what his abilities, his disposition, and his trend of mind call him to be.

Every school is but an opportunity, an open sesame to education, and each man educates himself in accordance with the fashion in which he uses this opportunity. Marble halls and granite walls can do this for no man. He must do it for himself. And the faculty of this school finds solace in the fact that the personal equation developed within the walls of this small amphitheatre, the progression of individualism fostered here by the close relationships between teacher and pupil is one of the most fruitful elements toward making students knock hard at Opportunity's door and bend every energy to enter the portals of Success.

To this picture, however, there is another side and on that side the faculty appear as largely the servants or stewards of the Alumni Association. You meet here each year to receive from us an account of our stewardship, to take notes of appearances, to mingle with the graduating class, to form personal opinions concerning our present situation, to determine each alumnus for himself how well we have kept the faith in maintaining standards of professional attainment agreeable to those higher ideals now demanded. And commencement day is the time wherein the Alumni can apply to the faculty St. Luke's biblical injunction,—“Give an account of thy stewardship.” Replying to that injunction I can say that unlike the unfaithful steward of biblical lore the faculty of this school have “wasted no goods under their charge.” They have meted out justice to all. They have required honest work. They have observed the traditions of the past, the needs of the present. They have tried to meet the demands of the future as well as the unprophectic eye of man can discern them. Where the requirements of science have so demanded, they have allowed no student to write down fifty measures of proficiency when he owed a hundred. The tactics of St. Luke's steward have not been theirs. When the standards of this old school required one hundred measures of work, they have said to no favored pupil, “Take thy bill and write down four score.” And for the course the faculty to-day place themselves in your hands for judgment hopeful of the biblical verdict that they have “done wisely.”

The advanced professional standing required of the graduate of to-day is so well understood by all, that no extended reference is required at this time. Has the Albany Medical College kept abreast of the times and what is its rank as an educational institution? If you look about you to-day you find a greatly increased teaching corps, multiplied lecture rooms, newly organized laboratories in pathology, pathological chemistry, the Roentgen ray and additional opportunities for research in the various departments of experimental medicine and surgery. The constant use of the theatres of the Bender Laboratory and of the Albany and St. Peter's hospitals supplement the lack of room in our overcrowded college building. Even though some of our laboratories and lecture rooms are neither modern nor ornate in construction, yet measured by practical utility they are still wonderfully efficient in the plan of education. Our graduates have taken in recent years uniformly high standing before the several state examining boards, the record of this college as published in the comparative tables of the Journal of the American Medical Association every year, is a source of honest pride in this institution for all of us alike. Our graduates are successful in competitive examinations for professional positions held everywhere in the state and national services.

In a rather extensive professional acquaintance my attention has often been called to the substantial character of the Alumni of this college, both in medicine and in social life. Many of them are holding with high esteem important positions as teachers and medical officers. Many others are important factors in the vicinity wherein they live, not only as wise physicians but as upright citizens, useful to their neighborhood in the dual capacity of physician and man—leaders with the highest of ideals—professional, social and educational.

Substantial rather than showy in his characteristics our Alumnus wears well and improves as early acquaintance leads to friendship and confidence.

Never, my friends, in our history has the faculty presented a better graduating class for membership in this Association than at this time. The men have uniformly pursued their studies with seriousness and sustained diligence. They have more than completed the curriculum prescribed by the laws. As labor deserves reward so do they deserve every success. I am sure every teacher joins with me in commending them to your confidence and fellowship.

However honorable may have been the past of the Albany Medical College, however excellent its traditions, however notable its achievements, we cannot live on the glories of the past. We must be active in an earnest effort to so perform the exacting duties of the present that we may deserve the loyal support of you, through whom all future success of this institution must come. We are successfully demonstrating here within the walls hallowed by the tradition of March, Mac Naughton, Beck, Armsby, Hun, the Townsends, Mosher and Perkins, the proposition that the smaller medical college has an important and enviable position in our system of education.

In fact the smaller college is at last coming into its own. Acknowl-

edgment of its efficiency is found everywhere in the reform educational and ethical movement, spreading throughout the country. From Harvard, from Princeton, from Cornell, from every educational centre, come echoes of a policy to make large institutions a series of small colleges. Already in Europe has the idea taken deep root. At last the value of individual influence of teacher over pupil is becoming recognized. At last the worth of recitation and quiz is being acknowledged over mere lecture work. At last the small college is being saluted as the home of honest intellectual toil, as the parent of individual development and as the inheritor of the educational wealth of that greatest of all educational systems—the German gymnasium. And, my friends, this system which some of the pedagogs are hailing as a wonderfully new theory in education, as a marvelous innovation, has been an established fact in this medical college for nearly fifty years; has been the foundation cornerstone, and superstructure of its success and will continue to be the keynote of its policy as long as the shades of Perkins, Mosher, Townsend, Hun, Armsby, Beck, Mac Naughton and March continue to hover around this old amphitheatre.

On motion of Dr. Frederic C. Curtis, the thanks of the Association were tendered Professor Macdonald for his address and a copy was requested for publication.

Dr. Maurice J. Lewi then moved that the President appoint a committee of five to nominate officers for the ensuing year. Carried. The President appointed as such committee: Drs. Maurice J. Lewi ('77), John H. Cotter ('78), George A. Bradbury ('83), Arthur Sautter ('94), and Daniel C. Case ('70).

The Recording Secretary presented the

REPORT OF THE EXECUTIVE COMMITTEE AND RECORDING SECRETARY.

Three meetings of the Executive Committee have been held during the year. At the first meeting, June 5, 1907, the Recording Secretary presented the minutes of the thirty-fourth annual meeting of the Association, including an account of the commencement exercises, and was authorized to publish these minutes in the ALBANY MEDICAL ANNALS and to provide reprints for distribution to the members of the Association in the usual way, the treasurer being authorized to pay the cost of the reprints and of the envelopes for mailing.

Dr. Sautter, of the Entertainment Committee, presented a report showing a balance returned to the Treasurer of \$26.47. The Treasurer reported a balance on hand of \$192.76. Dr. Sautter presented his resignation as a member of the Executive Committee, and Dr. John H. Gutmann was selected to fill the vacancy thus created.

The second meeting of the committee was held on February 1, 1908. The Treasurer reported a balance on hand of \$111.70 and a resolution

was carried for the appointment of committees to arrange for the annual meeting of the Association.

The third meeting was held on April 3, 1908. The program for Alumni day was adopted and resolutions were passed providing for the publication and distribution of the circular announcements, also for the invitation to the faculty to select a member to present the address of welcome.

On motion of Dr. Herman Bendell, the report of the Executive Committee was accepted and ordered entered upon the minutes.

The Treasurer, Dr. Robert Babcock, presented his report for the year as follows:

TREASURER'S REPORT.

CR.

Balance on hand May 1, 1907.....	\$51 91
Dues received during year 1907.....	280 20
Total	<u>\$332 11</u>

DR.

Various bills paid for which* vouchers are presented....	<u>\$236 83</u>
Balance on hand May 1, 1908.....	\$95 28
College Building Fund.....	<u>\$122 29</u>

[Signed]

ROBERT BABCOCK,
Treasurer.

On motion of Dr. George G. Lempe, the Treasurer's report was referred to an auditing committee, consisting of Drs. Lempe, Christian G. Hacker, and Thomas W. Jenkins, who subsequently reported it correct. The report of the Auditing Committee was received and the committee discharged, and the report of the Treasurer was accepted and ordered placed on file.

The President's address being the next order of business, President Willard delivered the following address:

PRESIDENT WILLARD'S ADDRESS.

In accordance with a time-honored custom the President interrupts the proceedings at this point to make an address on some topic connected with the practical work of our profession or with the history of the institution in whose honor we are gathered to-day. I cannot expect to

interest you except in a limited way in talking on a practical subject since nearly all of my experience has been connected with what might be called a specialty of practice and a very important one at that. I will not attempt at this time to discuss some features connected with the organization of the profession and the growing spirit of what looks unpleasantly like trades-unionism among physicians whose proud boast has ever been the entire absence of commercialism in any of its forms from the life and practice of its members. So endeavoring to find a subject connected with the rise and progress of the Albany Medical College I was confronted by the fact that seventy years ago this very month our college entered into being and from the very beginning it has maintained the high ideals with which it started and has even increased with the steadfastness which has not been surpassed by any similar institution in the country. It has sent forth a long line of illustrious men; it has maintained uninterruptedly its position in the very front of the medical colleges in the country and it has been served by a succession of faithful, unselfish men whose successors of the present day have maintained the old traditions as to excellence and thoroughness and who exemplify in their life and character the best meaning of that much-abused word doctor which is teacher. In every particular save one the college is fully and properly equipped but it has for some time been apparent that a new college building is needed, for the resources of the present structure are taxed to their utmost and before very long a modern and commodious college building or group of buildings will arise to continue with unabated success the work of this venerable institution of medical learning. I feel I am violating no confidence in asserting that this need has been recognized by the faculty and friends of the institution for some time past and before long a definite movement to meet the demands will be set on foot.

It seems to me, therefore, particularly fitting that the graduates of the institution should be apprised of these facts for I believe they will esteem it an honor and a privilege to inaugurate the movement. Certainly they can testify to the loving, patient and fatherly instruction of the teachers of their day, whether they are graduates of half a century ago or of this year and there is a special reason why their loyalty in this emergency can safely be counted on for in no other first-class medical college has there ever been or is there now the same opportunity for mutual understanding and personal acquaintance with each other of professor and scholar and in no other institution has there ever been to such a large extent as in this the personal impress made on the student by the teacher. I am not urging or even asking that the Alumni of the Albany Medical College shall meet the need to which I refer, but it does seem to me that they should appreciate the opportunity which is afforded of inaugurating the movement. The building or buildings will be erected whether we as a body or as individuals do something or nothing. The need is there and the faithful faculty will endeavor to meet the need as they have met every other demand which had been made upon them. Why not give them courage and hopefulness in the matter by showing them that among the Alumni of the institution, who

have experienced its benefits and who have known and revered their teachers of to-day or of former days, there are many who can be relied upon to help to such an extent that the fulfilment of this great need can be anticipated by a few years.

There are many different sources from which aid can come in this undertaking and we can evoke that assistance by the timely and appropriate evidence on our part that we are willing to help ourselves and do our share. The public-spirited citizens of Albany, generally, have in times past never been appealed to in vain. The personal friends and admirers of the institution have many times in the past shown that their interest in it was more than a sentimental one and the faculty itself once the movement is inaugurated will show both in what they do themselves and in what they succeed in getting others to do that they have a deep and abiding love for the old college.

This Association is maintained largely, perhaps, on sentimental grounds. It was created and has continued its existence in response to the natural demand which is recognized in all similar institutions for the opportunity of reviving old memories, attending reunions of classes and of generally forwarding the interests of the institution, and I am persuaded that underneath the purely sentimental feeling for the college which we are all so proud to assert there is a deep and abiding loyalty to it and its faithful teachers to which we will be glad to testify when a way is shown whereby this feeling can with effectiveness be exhibited.

As to the manner in which the Alumni may show this appreciation and help this movement, I would suggest there are three ways which at the present time occur to me and undoubtedly others will occur to many of you. We may act in our individual capacities and testify according to our means and ability our belief in the institution, our admiration for its maintenance of high standards and our feeling of personal indebtedness, for there are many of us, I believe, who feel that we received in the Albany Medical College much more than we paid for in cold cash. One alumnus already has made a contribution which amounts to about \$5,000 and this has been in the hands of the faculty for a short time. It is available for use just as soon as a sufficient sum is in prospect to make the faculty feel that the moment for action has arrived. Second: the annual reunions are the occasions of celebrations on the part of classes who celebrate their tenth, twentieth, thirtieth reunions, etc. These afford an opportunity in advance of the meeting of exchanging views, agitating questions among the members of classes, and several classes have already made subscriptions payable in five equal annual instalments which, though conditional on a satisfactory start being made, already amount to considerably over \$5,000. Some of the payments are being made at this time although we cannot say that a satisfactory start has been made. The third way is to agitate the question in localities where are found a number of graduates who are of different classes. In Dutchess County a very nice sum has already been pledged, with the same conditions to which I referred, among the graduates of the institution who are there located, and in view of the fact that all these movements have been made without an appeal from the faculty we

feel that by acquainting the Alumni generally with the situation that there will be a prompt response and a splendid indication of that spirit of loyalty which we are sure exists and all this will result in great encouragement to the faculty and friends of the institution which will cause them to take up the matter at once.

As I have said the new college building is coming whether we help in its erection or not and in that commodious and dignified structure there will be many memories of the dead and gone worthies and of many who are not dead and who, we hope, may be long spared to the college and to the public. I can picture in my mind's eye an Alden March memorial, say of a splendid amphitheatre lecture hall which shall testify to the soundness of the foundations laid by this great man; of an Armsby memorial museum to house the collection which since its very beginning has been one of the most important in this country; of lecture rooms named in honor of professors and teachers whose memory is still treasured by the older graduates, and there are professors still with us whose admirers and beneficiaries among the general public would be glad to testify toward the erection of some dignified and fitting offering while the man thus honored was still alive. There are many who believe "Better a rose to the living than sumptuous wreaths to the dead."

In our present building we have what is called an Alumni Hall and whether or not we should arrange to have our contribution take the form of reproducing it on a larger and grander scale in the new structure is something we can leave to our successors to determine. Does it not, therefore, seem that it is our duty to inaugurate the movement which will secure, after we have acted and shown as no one else can show so well, the merit and worth of the old college, the help and assistance of many others to whom the name of the Albany Medical College is that of a revered friend and benefactor.

If it is your pleasure I will suggest that a special committee representing the Alumni be appointed at this meeting to carefully consider the subject and inaugurate plans and methods whereby the matter can be thoroughly canvassed and understood by the Alumni generally, so that next year they may report and announce the erection of a fund in honor of the seventieth commencement of the college which will then be celebrated.

The members of the Class of 1908 were present in a body, and rose as the President addressed them at the conclusion of his address, and received them into membership in the Association.

Dr. MacFarlane moved a vote of thanks to the President for his interesting address, a copy of which he was requested to furnish for publication in the ALBANY MEDICAL ANNALS. The Recording Secretary put the motion to a vote, and declared it unanimously carried.

The report of the Historian of the Association, Dr. Hinman, was then presented and ordered entered on the minutes.

REPORT OF THE HISTORIAN, E. E. HINMAN, M. D.

Gentlemen of the Alumni Association: I beg to submit the following as my report for the year just brought to a close. The history of the Class of 1898 was secured by the Historian of that class, Dr. Edmans. All of the other classes are reported by myself.

The Class of '48 graduated twenty-one men. Of these we have records of two who are living and have reported this year. Thirteen have died, of which number we have biographical records of seven. One did not reply to inquiries. The remainder have never left any record.

The Class of '58 numbered fifty-three. We have biographical records of nine who are living, two did not reply to inquiry and twenty-five have died, of which number we have biographical records of five and only notice of death of twenty. We have no records of the remaining seventeen. The two living members are here to-day.

The Class of '68 numbered thirty-five. We have biographical records of twenty-one who are living, one did not reply to inquiry and nine have died, of which number we have biographical records of two and only notice of death of seven. We have no record of the remaining four.

The Class of '78 numbered thirty-one. We have biographical records of sixteen who are living, seven did not reply to inquiry and eight have died, of which number we have biographical records of three and only notice of death of the remaining five.

The Class of '88 numbered thirty-seven. We have biographical records of eighteen, eight did not reply to inquiry and eight are dead, of which number we have records of two and notice of death of six. We have no record of the remaining three.

The Class of '98 numbered fifty-seven. We have biographical records of fifty-six who are living. One is dead and we have a record of him.

NECROLOGY.

- Byron E. Osborn ('54), at Auburn, N. Y., during September, 1907.
Amos S. Jones ('54), at Dayton, Wis., February 23, 1908, aged 77.
Robert O. Craig ('55), at Janesville, Minn., July 13, 1907, aged 74.
James E. Casey ('55), at Mohawk, N. Y., May 18, 1907, aged 80.
Reuben H. Burton ('55), at New York City, April 22, 1907, aged 79.
Lewis W. Hodgkins ('56), at Elsworth, Me., June 11, 1907.
Obediah T. Ellison ('56), at Condersport, Pa., about April 15, 1908.
J. H. Merrill ('58), at Potter Hill, R. I., during July, 1894.
George T. Fossard ('59), at Brooklyn, N. Y., May 10, 1907, aged 68.
D. M. Caughell ('58), at Morrison, Mo., September 26, 1901.
John R. Creighton ('61), at Spokane, Wash., March 27, 1908, aged 72.
John Hotaling ('63), at Gallupville, N. Y., March 30, 1907, aged 70.
Daniel S. Hardenburgh ('63), at Jersey City, N. J., December 31, 1907.

George J. Holmes ('63), at New Britain, Conn., December 14, 1907, aged 53.

Jackson A. Hubbard ('63), at Mason City, Iowa, December 9, 1907, aged 74.

John Russell ('64), at Denver, Col., October 28, 1908.

George Rowe ('64), at Gloversville, N. Y., May 5, 1907, aged 68.

Dwight Fowler ('65), at River Falls, Wis., March 15, 1908, aged 69.

Sylvester D. Lewis ('66), at Syracuse, N. Y., June 16, 1906, aged 79.

William M. Lawlor ('67), at San Francisco, Cal., October 21, 1907, aged 62.

Richard S. O'Connell ('71), at Cato, Wis., December 9, 1907, aged 74.

Henry Clapsaddle ('72), at Toddsville, N. Y., June 29, 1907, aged 66.

Edward B. Atkins ('74), at Denver, Col., January 8, 1908.

J. S. Peaslee ('74), at Schodack Landing, N. Y., February 7, 1908, aged 56.

Henry C. Peck ('75), at Port Dickinson, N. Y., March 19, 1908, aged 54.

Daniel P. Van Court ('75), at Mohawk, N. Y., during June, 1907, aged 67.

Eben N. Wood ('75), at Syracuse, N. Y., August 12, 1907, aged 54.

Henry Lilienthal ('78), at Albany, N. Y., October 6, 1907, aged 53.

Hezekiah D. Fuller ('79), at Berlin, Wis., March 20, 1908, aged 57.

Hamilton A. White ('80), at Fort Plain, N. Y., March 20, 1908, aged 58.

George H. Van Wagner ('81), at Wappingers Falls, N. Y.

Fayette E. Ashley ('81), at New York City, February 8, 1908, aged 49.

Henry L. Furbeck ('81), at St. Johnsville, N. Y., July 11, 1907.

Nathan A. Caldwell ('81), at Hagaman, N. Y., December 20, 1907, aged 51.

W. L. DeGolia ('82), at Crossville, Tenn., September 19, 1907, aged 51.

Charles A. Bolz ('83), at Petaluma, Cal., February 2, 1908.

Louis A. Harris ('84), at Newburgh, N. Y., August 18, 1907.

James B. Kennah ('89), at Saratoga, N. Y., July 11, 1907.

William J. Pennington ('91), at Brooklyn, N. Y., March 30, 1908, aged 42.

J. E. Kelly ('91), at Pittsfield, Mass., January 17, 1908, aged 39.

Herbert N. Tanner ('95), at East Aurora, N. Y., January 25, 1908, aged 38.

John D. Crane ('05), at Brentwood, L. I., November 8, 1907.

Respectfully submitted.

E. E. HINMAN,

Historian, A. M. C. A. A.

HISTORY OF THE CLASS OF 1848.

ELIHU BUTTS. No record.

G. L. CARHART. After graduation located at Weathersfield Springs, N. Y., where he married. Within the next five years practiced at Linden, N. Y., and Alexander, N. Y. In 1855 moved to Mt. Vernon, Iowa, be-

cause of his wife's poor health. Served as surgeon of the 31st Regiment Iowa Volunteers, chief operating surgeon of the 15th Army Corps, General Superintendent of the Field Hospital at Marietta, Ga., during the siege of Atlanta, and other positions of trust in the medical department of the army during the Civil War. Located at Marion, Iowa, in 1878, where he still resides, doing but very little active work at present. He is now 84 years old, has been married twice and has one son, who is also a physician.

E. H. CLARK. No record.

THOMAS S. DAWES. After graduation settled in Saugerties, N. Y., where he practiced for nearly fifty years, his death occurring April 11, 1897, as the result of apoplexy, occurring after an all night's attendance upon a case of confinement. For a country practitioner he was unusually skillful as a surgeon and his advice as a consultant was sought for many miles around. He served as president of the Ulster County Medical Society and for six years was State Health Commissioner of New York. He is survived by a wife and four children, the youngest being a physician and Adjunct Professor of Materia Medica in the Albany Medical College.

SAMUEL DODGE. No record.

JOSEPH S. DOLSON. Died at Hornell, N. Y., July 10, 1893.

SAMUEL B. FOSTER. Practiced for many years at Vestal, N. Y., where he died. No other record.

AUSTIN W. HOLDEN. Practiced at Glens Falls, N. Y., where he died July 19, 1891, aged 72 years.

LYMAN B. W. JOHNSON. No record.

SAMUEL H. KELLY. Practiced at Walton, N. Y., where he died July 22, 1893. No other record.

JOHN A. LIDELL. Died July 11, 1883.

DELOS H. MANN. Is said to be living at 194 Clinton Street, Brooklyn, N. Y. Did not reply to inquiries.

A. W. McNAUGHTON. No record.

FRANCIS G. MOSHER. Died at Coeymans, N. Y., where he did a large general practice for many years, September 22, 1894, aged 71 years.

CHARLES C. MURPHY. Died August 8, 1874, aged 50 years.

JONATHAN NICHOLS. After graduation practiced one year in Troy, N. Y., seven years in Charlton, Mass., thirteen years in Wisconsin, and spent the remainder of his life in Atlantic, Iowa. When he went to Atlantic he engaged in the drug business and in the practice of medicine until 1874, when he discontinued his medical practice and continued in the drug business. He was married in 1851 in New York City to Miss Mary Makepeace, who survives him, the ceremony being performed by Rev. Henry Ward Beecher. Three children besides his wife survive him. He died at Los Angeles, Cal., January 17, 1905, of heart disease.

GEORGE W. REYNOLDS. Lived at Conquest, N. Y., where he finally died. No other record.

DEWITT C. RICE. No record.

HENRY M. T. SMITH. No record.

SYLVESTER D. WILLARD. No record.

RANDALL WILLIAMS. For the first five years practiced in LeRoy, N. Y., and then for ten years at Byron, N. Y. He then returned again to LeRoy where he is still doing some work at 84 years of age.

Respectfully submitted,

E. E. HINMAN,
Historian, A. M. C. A. A.

HISTORY OF THE CLASS OF 1858.

WASHINGTON AKIN. After graduation located in Troy, N. Y. In a little over a year was appointed city physician and attending physician and surgeon to the Troy Hospital. At the breaking out of war was appointed assistant surgeon of the 125th N. Y. Vols. He served through the most important engagements and was present with General Grant when General Lee surrendered at Appomattox. Was married in 1865 and has had a son and two daughters. He has been police surgeon and jail physician and a physician and director of the Marshall infirmary of Troy.

The above record was reported in 1898. He died a few years ago.

N. ROUNDS BARNES. He saw service in the army during the Civil War and then practiced for a time in Cincinnati, N. Y., where he later died.

EDGAR C. BASS. Is said to be practicing in Cazenovia, N. Y., but he did not reply to inquiries.

E. COLLINS BLAISDELL. Died at his home, Quincy, Ill., December 22, 1905, of paralysis. No other record.

ELISHA C. BOWEN. During the Civil War had charge of a hospital in the South. After the war moved to Boston, Mass., where he practiced for several years. Was last known to have practiced in East Cleveland, Ohio, where he died about 1897.

ELIAS B. BOYCE. After graduation returned to West Sand Lake, N. Y., where he practiced until 1866 when typhoid and subsequent lung trouble compelled him to give up work for a time in order to regain his health. He spent most of the time from 1867 to 1872 traveling and then located at Averill Park, N. Y., where he is now still at work. Has been married twice and has one son living. He is now the Health Officer of the town and has been for many years a member of the leading fraternal organizations. He is in comfortable circumstances and expects soon to retire from business.

JAMES R. BRETT. No record.

CYRUS N. BROWN. Practiced in Belle Prairie, Miss., where he died some years ago. No further record.

A. E. BURR. No record.

WILLIAM P. BUSH. Died in the United States service in 1863.

D. M. CAUGHELL. First studied and started to practice homeopathy but soon was convinced that it was not practical. He then entered the Albany Medical College and after graduation went to the far West where he finally located at Morrison, Mo. Here he soon developed a

large practice. In 1860 he was married and had three sons and one daughter. He never held any public offices. He developed diabetes in 1884 which compelled him to give up part of his work. Early in 1901 a cancer developed on the left side of the throat which produced his death September 26, 1901, and he was buried with Masonic honors. A surviving son is a practicing physician and in active practice at Morrison, Mo.

WILLIAM B. CHAMBERS. Died leaving no record.

JOHN W. COBB. After graduating located in Montrose, Pa., where he remained until 1862. He then was commissioned assistant surgeon of the 134th Pennsylvania Volunteers. At the expiration of his service he returned to Montrose where he remained until 1873 when he removed to Scranton, Pa. He practiced in that city until 1877, when, becoming dissatisfied with the mining regions as a place of residence, he went to Binghamton, N. Y., where he is still in active practice.

ISAAC G. COLLINS. Died at Ossining, N. Y., December 18, 1885.

RICHARD S. CONNELLY. Dead. No other record.

W. B. CRANDALL. No record.

CHARLES W. CRARY. No record.

HENRY M. CRONKHITE. Is supposed to be attached to the office of the Surgeon-General at Washington, D. C. He did not answer inquiries.

WILLIS H. CROSS. No record.

ABRAM DEGRAFF. After graduation located at Bethlehem, N. Y., remaining there until 1875, when he removed to Guilderland, N. Y., and has been engaged in practice there ever since. Has served as U. S. Loan Commissioner for Albany County for three years, and for eight years was postmaster. He is a widower and has one son and three daughters.

GEORGE W. DRAPER. Practiced two years in Illinois. Then came east and located in Euclid, N. Y., remaining there eight years. He removed to Syracuse, N. Y., in 1869 and practiced there until he died, June 8, 1906, aged 73. He is survived by a wife and three children.

J. B. DRUMMOND. No record.

E. P. ELSWORTH. No record.

W. N. FLEETWOOD. Last known to be in Hawkinsville, Ga. Has not replied to inquiries since 1902.

JOHN A. FOLLETTE. Reported in 1898, when he was in practice in Boston, Mass., at which time he was also the Dean of the Boston Dental College. Did not reply to inquiries this year.

ADDISON W. GOODALE. Is supposed to be in practice in Watertown, N. Y., from which place he reported in 1898 as follows: "After graduation practiced in Jefferson County until 1863, when I accepted a commission as assistant surgeon in the 10th N. Y. Heavy Artillery and served with them until the close of the war. Then resumed practice in Watertown, but in 1868 accepted a position in the medical department of the Phoenix Life Ins. Co. and lived in Hartford, Conn., for about fifteen years. I then went to New York City for the same company. I finally returned to Watertown where I am still acting as an insurance examiner, but not practicing." He did not reply to inquiries this year.

JOHN R. GREGORY. Died at Ithaca, N. Y., July 17, 1887. No other record.

JOHN D. HALL. Died at Corajal ni Belize, British Honduras, in October, 1886. No other record.

HORACE HAMILTON. Died March 16, 1882. No other record.

L. H. HAMMOND. After leaving college located at Pascoag, R. I. Here he found not only a good practice but a wife. His wife died February 4, 1897, and two years later he removed to Oakham, Mass. Five years were spent there and then for three years was in West Boylston, Mass. He then removed to Worcester, Mass., where he lived until the time of his death, which took place at the home of his daughter in Waterbury, Conn., early in the year of 1905. He was survived by two children.

JONATHAN K. HAYES. After graduation began practice at Hoosick Falls, N. Y. He remained there four years and then moved to Hoosick, N. Y., where he is still living. He has always been unfortunate in having poor health which has prevented him doing much active work. His wife died twenty years ago and he has no children.

PETER E. HUBON. Died January, 1880. No other record.

CHARLES HUTCHINSON.. Practiced for the first year in Cape Elizabeth, Me. In 1859 he located in Waterford, Me., and secured a large practice. In 1862 he was appointed assistant surgeon in the army and was sent to Richmond, Va., where he served in the Seven Days' Fight, but in a few months his health gave away and he returned to Maine to get rid of the malarial infection. Recovering he commenced practice in Gray, Me., and remained in active work for nine years. He then removed to Portland, Me., where he is still at work but about ready to give it up for good. He is married and has had two children, a son and a daughter.

E. J. LAWTON. Died April 18, 1895. No other record.

GEORGE W. LITTLE. After graduation served as interne at the Albany Hospital and has since been engaged in active practice in Johnsbury, Fort Edward and Glens Falls, N. Y., in which latter place he is now living. Has been coroner of the town for twelve years. He passed examination for assistant surgeon in the United States Army during the Civil War but was rejected because of physical disabilities. He is a member of many prominent medical and fraternal societies and is now associated in practice with Dr. Palmer, of Glens Falls.

LEWIS MAINE. No record.

GEORGE R. MANN. Died in the United States service in 1864.

GORDON C. McCLELLAND. No record.

J. H. MERRILL. First practiced at Westerly, R. I., where he was favored with a large practice. At the breaking out of war he enlisted as assistant surgeon in the 1st R. I. Light Artillery. At the battle of Fredericksburg he was promoted to the grade of surgeon. Just prior to the close of the war he was compelled to resign because of injuries received and returned to his home and old practice in Potter Hill, R. I., where he died in July, 1894. He is survived by his wife and a son.

JOSEPH MILLIKEN. No record.

WILLIAM W. NEWTON. No record.

ELIPHALET NOTT, JR. No record.

JAMES E. POMFRET. Died February 22, 1869.

G. B. REJD. Died July 28, 1891, aged 59.

DARIUS SCOFIELD. Died at Washington, Iowa, April 15, 1893.

CHARLES E. SMITH. After graduating began practice in Whitesboro, N. Y.; where he has continued up to the present time in general work. Has served as Health Officer for twelve years and has been President of the Oneida County Medical Society. Was the physician to the Masonic Home, at Utica, N. Y., since its opening in 1886, and is consulting physician to St. Luke's Hospital, at Utica.

GEORGE SPRAGUE. No record.

WILLIAM A. VAN RENSSELAER. Died November 17, 1879.

BENJAMIN F. VOSBURGH. Reports that he "played around" for two years and in 1861 removed to New York City and became associated in practice with an established practitioner, where he continued in active practice until last year. He has now purchased a farm in Maryland and has retired from active practice. Was Medical Examiner for the Municipal Civil Service of New York City for twelve years. He has been married and has two children, one of whom is practicing medicine in New York City, and the other a daughter, is residing with him in Berlin, Md.

THOMAS W. WALL. No record.

H. C. WARDLAW. No record.

CORNELIUS A. WINSHIP. Died at Eagle Mills, N. Y., February 14, 1888.

OSCAR H. YOUNG. Died at Constantine, Mich., January 29, 1890, aged 54.

Respectfully submitted,

E. E. HINMAN,
Historian, A. M. C. A. A.

HISTORY OF THE CLASS OF 1868.

EDWARD AIKEN. After graduation began practice in Galway, N. Y., remaining there one year. He then removed to Perry, Iowa, where he is still in active practice. He has been a member of the Pension Examining Board for a good many years, County Physician for several terms and is surgeon for two railroads in his vicinity. He is married and has three children.

HENRY W. ALLEN. No record.

FORD H. BENEDICT. Practiced for many years in Weedsport, N. Y., where he died March 8, 1906, of pneumonia, aged 61 years.

JAMES A. BLAKE. After graduation first practiced at Hoboken, N. J., leaving there in 1882 and settling in Brooklyn, N. Y., where he still resides. He has been handicapped by ill health, but has made a fair degree of success. His practice is largely confined to the diseases of the ear, nose and throat. He has been married twice and has several children living, one of whom, Dr. J. Eddy Blake, is in active practice in Boston.

ASA B. BOWEN. Located in Maquoketa, Iowa, in 1869, where he has remained continuously ever since. He has given special attention to

surgery and recently has become active in politics, being, at the time of writing (March, 1908), a candidate for State Senator. He is married and has two children, one of whom is a practicing physician and is associated with his father in practice.

JOSEPH R. BROWN. After graduation spent seven years in Texas. Has been located at Seward, N. Y., for thirty years and has been successful in a general practice. He is married and has four children.

ORSON F. COBB. Died at Watervliet, N. Y., March 4, 1893.

GEORGE A. COX. For one year after graduating was associated with an uncle, Dr. J. W. Cox, of Albany, and then removed to Cohoes, N. Y., where he practiced for eighteen months. He then returned to Albany, where he is still conducting a large general practice. He was married while in Cohoes.

EDWIN CROCKER. After graduation located at Beech Lake, Pa., and remained there four years. In March, 1873, he settled in Narrowsburg, N. Y., and is still there doing general country practice and conducting a drug store also. He has been successful, but never married.

DAVID S. FAIRCHILD. Following graduation first located in High Forest, Minn., where for three years he engaged in general practice. He located in Ames, Iowa, in 1872, and remained there for twenty-one years. In 1877 he was appointed Physician of the Iowa Agricultural College and in 1879 was elected Professor of Physiology and Comparative Anatomy, which position he held until 1893, when he resigned to accept the position of surgeon for the Chicago & Northwestern Railroad, covering all of its lines in the State. In 1897 was appointed special examining surgeon for the Chicago, Milwaukee & St. Paul Railroad; in 1882 was elected Professor of Histology and Pathology in the Iowa College of Physicians and Surgeons at Des Moines, and in 1885 was transferred to the chair of Surgery. For the past twenty years his practice has been almost exclusively as a consultant, giving special attention to surgery and nervous diseases. He has contributed many articles to the medical press. He was the first organizer of the Story County Medical Society and its first President. In 1874 assisted in forming the Central District Medical Society and was made its President. He served as President of the Iowa State Medical Society in 1895. He was elected President of the Western Surgical and Gynecological Association and also served one term as President of the American Medical Association. He was a delegate to the International Medical Congress in 1876; was elected Dean of the Medical Department of Drake University in 1903, which post he still fills. He is married and has three children.

MERRITT B. FAIRCHILD. Has practiced in Syracuse, N. Y., since graduation. Is married and has two children.

E. L. FORD. Has practiced in Lexington, N. Y., ever since his graduation. He has always followed a general practice which has been sufficiently lucrative to enable him to retire if he wished to do so. He has been married twice and has one daughter. His son died about a year ago.

JOSEPH E. FERRY. Was last known to be in practice at Fabius, N. Y., but he did not reply to inquiries.

JOHN A. FRISBEE. No record.

ANDREW J. GUFFIN. He first practiced at Nassau, N. Y., and then at Canaan Four Corners, N. Y., but finally settled down at Carlisle, N. Y., where he still conducts a general practice. He was married, but lost his wife by death, and he has one son, residing in Albany.

LORENZO HALE. Practiced general medicine in Albany from the time of his graduation until 1901, when ill health required him to retire from active work. He was one of the founders of the ALBANY MEDICAL ANNALS in 1880 and was a member of the Editing Committee from January, 1884, until January, 1891. He served as Secretary of the Albany County Medical Society in 1880 and was its President in 1886. He is married and has a daughter and one son, Dr. Wilfred Hale, of Albany.

FRANCIS M. HAMLYN. Died March 11, 1900.

ROMEO E. HYDE. Began practice at Chazy, N. Y., and remained there seven years when he removed to Beekmantown, N. Y., continuing there until 1900, at which time he located in Plattsburg, N. Y., where he now resides. In November, 1905, he was elected Mayor of that city without opposition. He is married and has four children.

JAMES KELLY. Died July 22, 1893, at Walton, N. Y., aged 46 years.

JULIUS J. KEMPE. Practiced for many years at Rochester, N. Y. He went to Florida finally for his health, where he died of heart disease, at Pinellas, Fla., March 12, 1904, aged 61.

HENRY D. LOSEE. Died. No other record.

SCHUYLER LOTT. In the spring following graduation located at Reading Centre, N. Y., and remained there nearly three years. In 1872 removed to his present location, Bellona, N. Y., where he has a large general practice. He has been married twice and has one daughter.

ADAM MACKIE, JR. No record.

WILLIAM H. MEAD. Has been located for many years at Windham, N. Y., doing general practice.

NELSON H. MESICK. In May, 1869, began practice in the town of Taghkanic, N. Y., remaining there five years and then removed to the adjoining town of Livingston, and opened an office in Glenco Mills, N. Y., where he is at present. He is married but has no children.

JACOB B. NORWOOD. After graduating practiced in Preston Hollow, N. Y., remaining there until 1882, when, on account of poor health, he retired and has not since been in active practice. He still resides there; has been married twice; has been Coroner's Physician one year, and Supervisor of the town for nine years.

EDWARD F. QUINLAN. After graduation first located at Monticello, N. Y., where he practiced in partnership with his preceptor until 1872. His partner then moved away, leaving him with a large field to cover. In 1888 he disposed of his property and removed to New York City to engage in general practice and where he has since resided. While in Monticello he filled all of the offices of the Sullivan County Medical Society, and served as Jail and County Physician for fifteen years. He is married and has two children.

CHARLES F. SCATTERGOOD. Does not practice general medicine but con-

ducts an office in Albany, N. Y., for the treatment of cutaneous affections of the feet.

JOHN M. SHIELDS. Practiced medicine in Pennsylvania until 1878. That year he was sent to New Mexico as a medical missionary to the Indians of the Pueblo of Jemez. After reaching New Mexico he was ordained a Presbyterian minister. He lived nearly six years with the Indians. Since that time, although he has done much missionary work, he has been engaged in the practice of medicine. He now resides at Jemez Springs, N. M. He has been married three times and has seven children living.

EDWARD THOMPSON. No record.

LEWIS A. VAN WAGNER. Has been engaged in active practice for the last twenty years in Sherburne, N. Y. He has received all of the honors of the Chenango County Medical Society; is now and has been Health Officer for several terms, also a member of the Board of Education for twelve years. He is married and has two daughters.

JOHN A. WILBER. Died February 12, 1878.

WILLIAM A. WILSON. Left Albany in the spring of 1869 and opened an office in Branchport, N. Y., where he practiced thirteen years. He then removed to Bath, N. Y., where he practiced successfully until 1884, when he again moved, going to Grand Rapids, Mich., where he remained six years. Having been wounded in the Civil War he was greatly troubled during these years by a recurrence of symptoms and frequently had to stop work. He finally gave up practice and took a position in the city health department where he remained twelve years, leaving there in 1902, since which time he has not engaged in any professional life. He was married twice, losing both wives by death.

JOHN N. WRIGHT. After graduation went to Reedsburg, Wis., where he remained and practiced for one year, returning to New York State in May, 1870. He then married and established himself in Grand Gorge, N. Y., where he remained until the time of his death, December 21, 1906. He was active in politics and served for several years as a member of the County Committee of the Republican party. He was elected five times as Coroner, holding that office and also that of Justice of the Peace, at the time of his death. He was postmaster during Presidents Garfield, Arthur and Harrison's administrations. He was a sufferer from asthma for many years and died without warning of heart failure. He is survived by his wife and one son.

JOHN F. CROUNSE. Died in 1872. No other record.

Respectfully submitted,

E. E. HINMAN,
Historian, A. M. C. A. A.

HISTORY OF THE CLASS OF 1878.

FREDERICK H. BREWER. First practiced at Conway, Mass., but after one year removed to Madrid, N. Y., where he remained fourteen years in general practice. He has spent the last fifteen years in general work

at Utica, N. Y., his present location. He is married and has four children.

EDWARD W. CARHART. In 1898 was reported to be doing general practice in Milton, N. Y. He is now said to be practicing in Brooklyn, N. Y., but did not reply to inquiries.

CHARLES I. CONOVER. Practices in Charleston Four Corners, N. Y., where he has been ever since he graduated. He has a large country practice; has been married twice and has one son living.

JOHN H. COTTER. Began practice at Mount Ross, N. Y., but after two years moved to Jackson Corners, N. Y. Here for fourteen years he labored hard and accumulated much of that which is pleasant to own. At last tiring of the hard country practice he planted the farm and apple orchards and removed to his present home, Poughkeepsie, N. Y. He is a member of the A. M. A., the New England Association of Railway Surgeons, and is an ex-President of the Dutchess County Medical Society. In 1904 he served as President of the Alumni Association of the A. M. C. He is Physician to St. Andrew's Novitiate-on-Hudson, St. Ann's Hermitage-on-Hudson, surgeon to the N. Y. C. & H. R. R., a member of the Board of Health and Jail Physician of this city. He is married and has one son, also a graduate of the A. M. C.

HORATIO CRAIG. Began his practice at Middle Grove, N. Y., where he remained for ten years. He then removed to Ballston Spa, N. Y., where he is still doing general practice. He is married and has one child.

EARL D. FULLER. Has devoted himself to general practice for the past thirty years at Utica, N. Y. He has served for many years on the staff of St. Luke's Hospital and has been Health Commissioner for a long time. He is married and has several children.

GEORGE F. GARDNER. Practiced in Williamstown, N. Y., for four years, and the balance of the time has been doing general work in Ellisburg, N. Y. He is married and has two children.

STEPHEN A. GATES. First located at Empire, Mich., but soon moved to Eastport, Mich., where he still remains. He is married and has one son.

PIERRE C. HOAG. Last known to be in practice at Manhasset, N. Y. Did not reply to inquiries.

GEORGE HOPKINS. No record.

CHARLES A. INGRAHAM. Practiced for the first twelve years in Saratoga County, with the exception of one year spent in Schenectady. Resided one year in Brooklyn and then removed to Cambridge, N. Y., where he has since remained. He has published two books, one a volume of poems, "Songs of All Sorts," and one of essays, entitled "Steps Up Life's Ladder." He is married and has three children.

AUSTIN D. JOHNSTON. Is still in active practice at East Branch, N. Y. He has served as Coroner for a number of years; is married and has one son.

HENRY LA HANN, JR. Is reported to be at Burlington, Wis. Did not reply to inquiries.

URIAH LA MOURE. Practiced for many years in Albany, N. Y., where he died March 2, 1899, aged 55.

HENRY LILIENTHAL. Practiced in Albany, N. Y., doing general work, until October 6, 1907, when he died, aged 53 years. He was married and had four sons.

ALMER A. LYKER. Last known to be in practice at Rural Grove, N. Y. He did not reply to inquiries.

ADELBERT H. MAMBERT. He has been practicing in Kingston, N. Y., ever since graduation, where he has a fine general practice. He has been a member of the Board of Health, Trustee of his church, on Staff of the City Hospital and connected with many medical societies. He is married and in excellent health.

DEWITT J. MATTESON. Died at Mt. Vision, N. Y., September 1, 1884, aged 29 years.

GEORGE W. McLAUGHLIN. Died. No other record.

GEORGE F. MORRIS. Started in active practice in New York City soon after graduation. He was appointed to a position in the Health Department and held the same for twenty years. He is now in active general practice and doing well. He is married and has one son who is about to graduate in medicine.

WILLIAM L. PEARSON. Has always practiced in Schenectady, N. Y., where he is now doing a very large general practice.

GEORGE P. K. POMEROY. He has always practiced in Stuyvesant, N. Y., where he is at present, doing a general practice. He has been the Health Officer since 1881.

JOHN P. PRENDERGAST. Is in active general practice in Troy, N. Y., where he first located.

JOHN C. SHILAND. Is located at Watervliet, N. Y., doing general practice.

GEORGE F. SMITH. Died June 8, 1882. No other record.

THEODORE L. ST. JOHN. Was last known to be at Centre Brunswick, N. Y. He did not reply to inquiries.

WILLIAM O. STILLMAN. After graduation was associated with Dr. Strong in the management of a sanitarium in Saratoga, N. Y., where he lived until 1883, and then went abroad for a year and a half. In 1884 he returned and located in Albany for general practice, where he has lived ever since. He is President of the Mohawk and Hudson River Humane Society, President of the New York State Humane Education Committee, President of the American Humane Association. He was awarded a gold medal by the Louisiana Exposition in 1904 for his distinguished services in philanthropic work. He is a member of various other organizations, among which may be mentioned the Association of American Anatomists, American Society for the Advancement of Science, the American Sociological Society, etc. He is connected with the medical staff of a number of local institutions and has contributed largely to medical literature.

FRANK B. SUTLIFF. Began practice at Chatham, N. Y., and then moved to Burnt Hills, N. Y., where he remained four years. He then moved to the Hawaiian Islands, where he spent four years and married.

Again he returned to the United States and settled in Sacramento, Cal., his present home, where he is doing general work.

GEORGE W. VAN TASSELL. First located at Freehold, N. Y., where he remained until his death, which occurred a few years ago.

WILLIAM D. WALRADT. Practiced for a short time in Massachusetts and then removed to Castleton, N. Y., where he lived for over twenty-five years. He died in the Albany Hospital September 6, 1906, after an operation and an illness of two weeks. He leaves a wife and two children.

EDWARD E. WHITEHORNE. Is supposed to be practicing at Arena, Wis. Did not reply to inquiries.

Respectfully submitted,

E. E. HINMAN,
Historian, A. M. C. A. A.

HISTORY OF THE CLASS OF 1888.

ROBERT M. ANDREWS. Died at Guilderland, October 18, 1888, hardly six months after he graduated.

JOHN ARCHIBALD. Began practice in Troy, N. Y., remaining there six months and then located in Green Island, N. Y., where he practiced three years, two of which he served as Health Officer. He then removed to Cohoes, N. Y., where he is now in active general practice. He has been Health Officer of the latter place for fourteen years and left that office to assume that of Mayor, which office he held for two years, retiring in January of this year. He is married and has one daughter.

FRED M. BARNEY. Commenced practice at Dolgeville, N. Y., immediately after graduation and continued there until November, 1897, when he sold out and moved to Little Falls, N. Y., where he was not practicing in 1898. He is now reported to be in Manila, P. I., but did not reply to inquiries.

DAVID J. BARRY. Died at Schenectady, N. Y., April 1, 1897, after nine years of general practice. He was unmarried.

RUDOLPH BESTLE. After graduating began practice in Troy, N. Y., but left after one year and went to a small town called Burke, N. Y., where he had a large practice and remained seven years. He then moved to Hunter, N. Y., where he developed a large practice and died August 9, 1905, leaving a wife and one daughter.

FRED CARR. No record.

CHARLES F. CLOWE. Went at once to Gloversville, N. Y., married and remained there one year. In 1889 he removed to Schenectady, N. Y., gave up practice, and in the following May started for Africa as a medical missionary. Here he remained three years and was finally sent back suffering severely from the effects of fever. After recruiting his strength he opened his office for practice in Schenectady, where he is still located. He is doing general practice.

JAMES CRONIN. After graduation he located at Seneca Falls, N. Y., and

remained there until July, 1890, when his office and all his belongings were destroyed by fire. He then went to Waterloo, N. Y., and stayed there until he went to Buffalo in 1893, where he developed a large practice. His death has just been reported by a classmate.

CHARLES B. CUNNINGHAM. Was last known to be living in Warrensburg, N. Y. He did not reply to inquiries.

ZOPHER F. DUNNING. After graduation first located in Brooklyn, N. Y., and remained there thirteen years. He then removed to Philmont, N. Y., where he is now doing a large general practice.

JOHN J. EVANS. After graduation took post-graduate work in diseases of the eye, ear, nose and throat. In 1889 he located in Rochester where he is now supposed to be, although he did not answer inquiries. He has been City Physician, member of the Board of Education, etc. He is married.

WILLARD H. FOX. After graduation practiced for two and a half years in Rochester, N. Y. He then moved to Tacoma, Wash., remaining there until 1895, when he was called to Los Angeles, Cal., on account of illness in his wife's family and he has remained there. He is doing general practice.

ALFRED F. HODGMAN. Began practice in Auburn, N. Y., and is still there. He gave up general practice in 1898, when he was commissioned Captain and Assistant Surgeon in the 3rd Regt., N. Y. Vols. He was mustered out with the regiment in December of the same year and after a post-graduate course took up diseases of the eye, ear, nose and throat. He is married and has one daughter.

WILLIAM HUTCHINSON. No record.

MICHAEL J. KEENAN. After graduating spent six months as interne at St. Peter's Hospital and then located in Troy, N. Y., where he is at present, doing general medicine. For several years he has been an Attending Physician to the Troy Hospital and also to the House of the Good Shepherd. He is married and has two sons.

FRANK H. LEE. He first located in Canaan, Conn., and he has been there ever since, doing general medical and surgical work. He is Health Officer of the town and surgeon for the Central New England Railway Co. He is married and has one daughter.

GEORGE G. LEMPE. He has always practiced in Albany. He was Attending Surgeon to the Homeopathic Hospital from 1889 to 1895. He is now Assistant Attending Surgeon to the Albany Hospital, Lecturer in Anatomy in the College, Assistant Surgeon, Troop B., N. G. N. Y., and holds membership in the A. M. A., American Association of Anatomists, American Association of Military Surgeons. He is now serving his second term as President of the Albany County Medical Society. He is married.

ELLIS LENGFIELD. Died at his home, West Chazy, N. Y., March 23, 1907.

EMERSON A. LUDDEN. For the first few years after graduation was engaged in the drug business. He then located at North Brookfield, Mass., and began general practice, which he is doing at present. He is married.

ROBERT F. MACFARLANE. Spent the first two years abroad. He then came to Albany and remained for one year, finally locating in Long Island City, N. Y., where he is doing a large general practice. He is married and has one daughter.

JOHN M. MCCLELLAN. Soon after graduation located at his present residence, Hartwick, N. Y., where he built up a large general practice. He has been Supervisor of his town and for several years Health Officer. He is married and has a daughter.

JOHN S. NEWCOMB. After graduating first located at Olympia, Wash. He married in 1891, built a home for himself and on December 25, 1893, had a Christmas gift of a little girl. Hard times coming on he moved east and was located in Lewiston, Idaho, four months, returning thence to Sprague, Wash. After two years of work he had acquired a good practice when his wife died suddenly. He then drifted for a short time and in 1902 located at Everett, Wash., where he has remained and is now doing well.

WILLIAM T. PEET. Was last known to be at work in New York City. Is reported to be dead. No other record.

EVERETT E. POTTER. After graduation located in North Adams, Mass., and stayed there about three months, doing a fair business. He then moved to his native town, Pownal, Vt., where he is still in active practice. In 1896 he was elected Town Representative and went to the State Legislature. In 1906 was elected Associate Judge of Bennington County Court, which position he holds at present. He has been First Selectman of the town for the past six years, and a member of the staff of the North Adams Hospital. He has been married twice and has one daughter.

JOHN S. B. PRATT. He has been practicing in Honolulu, Hawaii, for over ten years and is reported to be doing well.

JOHN W. QUINLAN. For the first three years was somewhat of an itinerant. In 1891 he located at Argusville, N. Y., where he remained until 1896, when he removed to Fort Hunter, N. Y., and is still said to be there, doing general practice. He did not reply to inquiries. He has been married twice and has three children.

GEORGE P. RIDER. No record.

CHARLES D. ROGERS. Died at Denver, Col., July 8, 1905.

EDWARD F. SHEEHAN. Last known to be practicing at Victory Mills, N. Y. He did not reply to inquiries.

DENNIS M. SMITH. He has always practiced in Cambridge, N. Y., doing a general practice and drug business until four years ago. He then gave up active work on account of poor health and now spends most of his time in the South. He is married and has two children.

FRANK T. STANNARD. Is practicing general medicine in Troy, N. Y., where he has been continuously ever since graduation. He is not married.

MYRON E. STEPHENS. First served as interne at the Albany Hospital for a year and a half. He then located at Gardiner, N. Y., where he is at present. He has been postmaster for over eight years and he is now the County Physician, Health Officer and member of the Board of Educa-

tion. A few years ago he took State examinations for pharmacist and now conducts a drug store in connection with his practice.

JOHN J. TIMLIN. After graduation located at Kingston, Penn., where he remained for six months. He then located at Old Forge, Pa., where he is now doing a large general practice. He is a member of the staff of Taylor Hospital. Is not married.

ALBERT L. TUTTLE. After some post-graduate work opened an office in New York City and practiced there a little over a year. He then moved to Kent, Conn., remaining there four years. In 1894 he again moved to Bridgeport, Conn., and in 1897 invested in a home in Milford, Conn., where he still remains doing a general practice.

EDWIN B. WELLS. After graduation took a short trip to the west and returned to spend the summer in Blue Stores, N. Y. In October he went to Findlay, Ohio, and purchased a drug store and in a few months lost his money. In 1890 he went to Arcadia, Ohio, and established a good practice. He is now practicing at Ellenburg Depot, N. Y., but did not reply to inquiries.

FRANK A. WINSHIP. Has practiced at Eagle Mills, N. Y., ever since graduation. He is doing general work and is married.

ADELBERT W. WITTER. Died at Quaker Street, N. Y., August 29, 1896, leaving a widow. He first practiced at Fort Hunter, N. Y., where he remained about a year and then removed to the above-named village.

Respectfully submitted,

E. E. HINMAN,
Historian, A. M. C. A. A.

HISTORY OF THE CLASS OF 1898.

ROBERT W. ANDREWS. Resides at Poughkeepsie, N. Y. He gives special attention to pathology and bacteriology, holding the positions of Bacteriologist to the Board of Health and Coroner of Dutchess County. He is a member of the American Medical Association and is President of the Dutchess County Medical Society. Is married and has two children.

J. A. BARNES. Is practicing in Troy, N. Y., where he has been ever since graduation. He served for three years as Surgical Assistant in the Troy Hospital and one term as District Physician. Is doing general practice, a member of the A. M. A., and is married.

H. R. BENTLEY. Is located in Saratoga, N. Y., where he is doing general practice. He is Obstetrician to the Saratoga Hospital and has charge of its Dispensary. Is married.

OTIS Z. BOUTON. Is doing a general practice at Fultonville, N. Y., where he has been since graduation. He is married and has one child.

H. A. BRYANT. Is doing general practice in Schenectady, N. Y. He is married but has no family.

MELEATUS BRUCE. Is doing general practice in Charlotteville, N. Y.,

giving special attention to surgery. He holds the position of Health Officer and is married.

F. F. BURTIS. Is doing general practice in Schenectady, N. Y., giving special attention to rectal and genito-urinary work. After graduation was appointed interne at the Ellis Hospital, of Schenectady, for one year and at the end of his service he took up his residence in that city. He has held for two years the position of City Physician and is at present Coroners' Physician. He is not married, but lives with his mother, sisters and a brother.

W. N. CAMPAIGNE. Is located in Troy, N. Y., where he is doing general practice. He is the Health Officer of Green Island, N. Y. (across the river from Troy), and is Surgical Assistant at the Samaritan Hospital. He is married and has one son.

W. O. CARPENTER. After graduation took post-graduate work and was appointed interne at St. Luke's Hospital, of Bayonne, N. J. He was married in 1901 and located in Medway, N. Y., where he served upon the Board of Health. He gave up practice in Medway in 1905 and removed to New York City, where he is at present, doing general practice.

T. D. COLLINS. After graduation located in Ballston, N. Y., where he is at present, doing general practice. He has held the position of Health Officer of the town of Melton, N. Y., for the past five years.

J. M. CRONK. Is in active general practice at Hyde Park, N. Y., ever since graduation. He is a member of the A. M. A., Health Officer, Town Physician and a member of the Board of Education. Is married.

R. G. EDMANS. After graduation served as House Physician at the Marshall Sanitarium, Troy, N. Y., for one year, and then started in general practice in that city, where he is still located. He has held the position of Deputy Health Officer of Troy since February 1, 1906, is Assistant Surgeon to the Troy Hospital and has charge of the Orthopedic Dispensary of that hospital. He is not married.

J. A. GAUL. Is doing general practice at Halcottville, N. Y., where he started in after graduation. He is married.

G. M. GILCHRIST. Is practicing at Groton, N. Y., giving special attention to diseases of the eye. He is married.

W. J. GREEN. After graduation started in general practice at Saratoga, N. Y., where he is now located. Is married and has one son.

M. S. GREGORY. After graduation practiced for several months in Troy, N. Y., and was then appointed medical interne at Craig Colony for Epileptics at Sonyea, N. Y., where he remained for six months. He was then appointed Junior Assistant Physician at Kings Park State Hospital, Kings Park, L. I., where he remained until February, 1902. He left there to accept the appointment of Assistant Alienist in the Psychopathic Department of Bellevue Hospital, New York City, and two years later was promoted to the position of Chief Alienist, which position he now occupies. He is making nervous and mental diseases a specialty, the latter almost exclusively. He is a member of the A. M. A., N. Y. Neurological Society, N. Y. Psychiatrial Society and the American Medico-Psychological Association. He is unmarried.

WILLIAM E. HENDRY. After graduation located at Margaretville, N. Y.,

where he remained several years. He then removed to Treadwell, N. Y., and practiced there a year and a half. On January 1, 1907, he removed to New York City, where he is now living. He is married.

FRANK HINKLEY. Spent the first four years in various small towns and then, deciding to take up the study of mental diseases, he accepted a position in the State Hospital, at Flatbush, N. Y., where he is still at work. He is married.

L. B. HONEYFORD. Six months after graduation located for general practice at Cairo, N. Y., and remained there until October, 1905. During the following winter and spring did post-graduate work in New York. He then spent several months in travel, returned to New York and sailed for Europe, where he made a special study of the eye. In March, 1906, he returned to this country and settled in Catskill, N. Y., where he is at present enjoying a good practice, giving special attention to the eye. He is married.

EMMOTT HOWD. Is located in Troy, N. Y., where he has been ever since graduation. He is doing general practice and is connected with the surgical staff of the Troy Hospital. He is married and has two sons.

B. K. HOXIE. Is practicing general medicine at Sherwood, N. Y., and holds the position of Health Officer of the town of Venice. He is not married.

F. I. JANSEN. After graduation located at Fonda, N. Y., where he is still at work, in general medicine. Is a member of the A. M. A.; is married.

D. J. JENKINS. After graduation located in Scranton, Pa., and has remained there. He is doing general work, is married and has two sons.

C. T. KING. Is doing general practice at Greenfield Centre, N. Y., and holds the position of Health Officer of the town of Greenfield. He is married.

F. M. JOHNSON. Is doing general practice at East Nassau, N. Y., where he holds the position of Health Officer. Is not married.

R. A. KIRKPATRICK. Has been practicing general medicine in Troy, N. Y., ever since graduation. He is a District Physician; is married.

C. F. KIVLIN. After graduation located in Troy, N. Y., where he is still. He is doing general practice, but giving a good deal of attention to surgery. He served for six months as interne at the Cohoes City Hospital and for a year and a half at the Troy Hospital. He is now Gynecologist to the Troy Hospital Dispensary and surgeon to the Salesain College, Troy, also surgeon to the Troy Clinic. He was City Physician for four years.

E. P. LASHER. Is practicing in New York City, doing general medicine. He is married and has two daughters.

R. L. LEAK. After graduation was appointed medical interne at the Ogdensburg State Hospital and since has passed through the various grades to the position of Second Assistant Physician, a position which he now holds. He makes a specialty of diseases of the nervous system and mental diseases. He is a member of the American Medico-Psychological Association, is married and has one daughter.

W. J. McGRATH. Began practice at Rotterdam Junction, N. Y., and on account of the ill health of his wife, sold out and moved to Norwich, N. Y., where he is now at work. He held the position of surgeon to the Boston & Main Railroad from 1904 to 1908. He is about to spend a year abroad in post-graduate work and upon his return will take up some specialty.

CHARLES G. McMULLEN. After serving as interne at the Albany Hospital he located in Schenectady, N. Y., where he practices surgery and gynecology as a specialty. He is surgeon of the Mohawk Division of the N. Y. C. & H. R. R. and is Gynecologist to the Ellis Hospital. He is married and has one daughter.

W. R. MILLER. Served as interne at the Hartford Hospital for two and a half years. He then located in Southington, Conn., where he is at present, doing general practice. He is Consulting Physician to the New Britain General Hospital; is married and has one daughter.

JOHN J. MŪLCAHY. He is located at Dr. Combes Sanitarium, at Flushing, L. I., and is giving his attention to nervous and mental diseases.

A. L. NEWTON. He is located at Northfield, Mass., where he is doing a general practice. He is a member of the A. M. A., is inspector of meats and provisions for his town, agent for the Massachusetts Society for the Prevention of Cruelty to Children, and is attending physician to the Mt. Hermon and the Northfield Seminary. He is married and has one child.

W. R. NICHOLS. Is in practice with his father at West Sand Lake, N. Y., and is doing a fine general practice. He is married and has two children.

J. P. O'BRIEN. Is doing general practice at Albany, N. Y. He is Attending Physician to St. Peter's Hospital Dispensary. Is not married.

P. J. O'BRIEN. After graduation was interne at Cohoes Hospital for one year and at the Troy Hospital for the following year. Is now doing general practice in Troy, was City Physician for six years; is married.

J. J. OSTERHOUT. Is doing general practice at Marlow, N. H. He is married and has three children.

E. C. PODVIN. He started in practice in Johnstown, N. Y., and stayed there for seven years. Then he removed to New York City, where he is now at work. He holds the position of Visiting Physician to St. Francis Hospital and is professor of hygiene and sanitary science at Fordham University Medical College. He is married and has two children.

F. L. POSSON. Is located at Schoharie, N. Y., where he is doing general work. He is the Health Officer of the town and is married.

CHARLES S. PREST. After graduation served for a short time as interne in the Cohoes Hospital. Later in the same year located in Waterford, N. Y., where he is at work now. He has been Health Officer of the town since 1901. He is married and has one son.

E. A. QUINLAN. Is in practice at Portchester, N. Y., and is doing general work.

J. F. ROONEY. Is making a specialty of internal medicine in Albany, N. Y. He is Coroner's Physician for Albany County, is chief of medical

clinic at the Albany Hospital, Attending Physician to the South End Dispensary, lecturer on hygiene and instructor in theory and practice at the Albany Medical College. He is married and has one son.

L. B. SCHNEIDER. He first served as an assistant at the Carnegie Laboratory and in Bellevue Hospital, in New York City. Later he was interne at the Samaritan Hospital, Troy, N. Y., then pathologist to the same hospital for three years, then assistant in the department of medicine and surgery and finally was appointed attending surgeon. He spent some time in post-graduate work in London and Berlin. He is married and has one child.

C. A. SHULTES. Is doing general practice at Preston Hollow, N. Y., where he is Health Officer and Coroner's Physician. He is married and has one daughter.

C. W. SKELTON. Is located at Providence, R. I., where he is doing well in general medicine. He is President of the New England Branch of the Alumni Association of the A. M. C., and is not married.

GEORGE B. STANWIX. Started in practice in Saugerties, N. Y., had septicaemia while there and had to give up work for one year. He then took up the eye, ear, nose and throat as a specialty and started in practice in Brooklyn, N. Y. He later moved to Binghamton, N. Y., where he was again taken ill. He is now located in Brooklyn, N. Y., and doing only his special work. He is married and has one child.

EDMUND STEVENS. Is located at St. Paul, Minn., where he is doing general medicine. He held the position of Police Surgeon during the years 1902 and 1903. He is now attending physician to the St. Paul City Hospital and adjunct professor of obstetrics at Hamlin Medical College, of Minneapolis, Minn. He is married.

W. J. SWART. Writes as follows from his location at Nakawn Sri Tamarat, Siam: "Declining to accept an appointment in the Spanish-American War for fear of too much camp life, I accepted one at the front out on the firing line, under the American Presbyterian Mission, in Siam. Served as resident physician and surgeon in their hospital at Petchaburee for four years, after that was transferred to Nakawn Sri Tamarat to do field service, and at the same time to raise funds for a new hospital. This hospital was opened last March. Having the only New York State Board License from Bangkok to Singapore, a radius of 800 miles, and located in a town of 20,000 in the centre of a densely populated community, it is not to be wondered at that my scalpel has become a magnet to our forty hospital beds with white mosquito curtains. My first wife died in Siam after three years of helpful assistance and in 1905, while in the United States on a furlough, I sought out another who was willing to give her life in the service at the front. Have one son and a younger daughter."

GILBERT V. THOMAS. After graduation took a post-graduate course in the Homeopathic College, at Chicago, Ill., and later located at Little Rock, Ark., where he practiced until death called him away, November 27, 1902. He was doing general practice and was unmarried.

A. H. TRAVER. After serving on the house staff of the Albany Hospital for one year he located in Albany, N. Y., where he is now at work. He

gave up all general medicine about a year ago and now gives his whole attention to surgery. He holds the positions of attending surgeon to the Childs Hospital, assistant attending surgeon to the Albany Hospital, attending surgeon to the Albany Orphan Asylum. He has taken post-graduate work at Johns Hopkins Hospital, at Harvard Medical College and in Europe. He is married and has two children.

B. G. TROIDLE. He began practice as resident physician at the Albany County Hospital and Almshouse and shortly after located for general medicine in Albany, where he continues. He is married and has one boy.

E. A. VANDER VEER. He held the position of acting assistant surgeon in the volunteer forces during the Spanish-American War, upon his return he went abroad and then located in Albany, N. Y., where he is associated with his father and brother. He gives his special attention to surgery and is attending surgeon to the Albany Hospital and clinical professor of surgery at the Albany Medical College. He is married and has three children.

D. L. VANDERZEE. After graduation practiced for a short time in Cherry Creek, N. Y., and then returned to locate in Albany, N. Y., where he remained until June, 1903, when he was appointed assistant physician at the New York State Reformatory, at Elmira, N. Y. This position he held until September, 1905, when he resigned to accept the position of resident physician at the State Industrial School, at Rochester, N. Y., which place he still holds. This institution has now moved to a new site at Industry, N. Y., and the name has been changed to the State Agricultural and Industrial School. He is married and has one son.

F. B. WEAVER. Is located at Hyde Park, N. Y., where he is doing a fine general practice. He is surgeon for the N. Y. C & H. R. R. and is not married.

W. L. WILSON. Is practicing at Scotia, N. Y., where he is Health Officer and a member of the Board of Education. He is doing general medicine and is married, having one child.

W. H. WOOD. Is practicing general medicine at Greeley, Colorado. He is married.

Respectfully submitted,

R. G. EDMANS,

Historian, Class '98.

The Nominating Committee, by its Secretary, Dr. Sautter, submitted the following report by its chairman:

REPORT OF THE NOMINATING COMMITTEE.

For President,

FREDERICK H. BREWER ('78), Utica, N. Y.

For Vice-Presidents,

ELIAS B. BOYCE ('58), Averill Park, N. Y.
ISAAC E. RANDALL ('66), West Bay City, Mich.
HENRY E. MERENESS ('74), Albany, N. Y.
CHARLES P. McCABE ('83), Greenville, N. Y.
WILLIAM S. ACKERT ('91), Poughkeepsie, N. Y.

For Recording Secretary,

J. MONTGOMERY MOSHER ('89), Albany, N. Y.

For Corresponding Secretary,

ANDREW MACFARLANE ('87), Albany, N. Y.

For Treasurer,

ROBERT BABCOCK ('84), Albany, N. Y.

For Historian,

ARTHUR J. BEDELL ('01), Albany, N. Y.

For Member of the Executive Committee (term three years),

WILLIAM GEOGHAN ('73), New York City.
LUMAN B. RULISON ('84), Watervliet, N. Y.
JOSEPH A. LANAHAH ('99), Albany, N. Y.
CHARLES S. PREST ('98), Waterford, N. Y.

On motion of Dr. Tucker, the Secretary was directed to cast one ballot for the names contained in the report. The Secretary then read these names and President Willard declared the members named in the report the duly elected officers of the Association for their respective terms.

The Recording Secretary directed attention to the change in Historian as reported by the Nominating Committee and approved by the Association, and announced that Dr. Hinman's retirement was voluntary and against the desire of the Association that he continue in office. The duties of the Historian are most exacting and the reports and biographical sketches procured and made each year by Dr. Hinman had been of the best character. Dr. Hinman deserved well of the Association for having served it so faithfully for a number of years and the Recording

Secretary moved an expression of appreciation and thanks on the part of the Association. The motion was unanimously carried and was expressed to Dr. Hinman by the President.

Dr. Frank M. Clement ('90), of Chicago, announced the plan for the annual meeting of the American Medical Association to include arrangements for alumni reunions and urged members of the Association in attendance upon the American Medical Association to avail themselves of this feature.

Dr. Craig announced that thirty-two members of the graduating class had received hospital appointments.

Impromptu remarks were made by Drs. Frederick H. Brewer, President-elect, Boyce, and Hinman.

Announcements of the program of the day, the commencement exercises and alumni dinner, having been made and no further business appearing, the Association adjourned.

COMMENCEMENT EXERCISES.

The seventy-seventh commencement exercises of the Albany Medical College were held at Odd Fellows' Hall, on Tuesday afternoon, May 19, 1908, at three o'clock, in the presence of a large audience. Samuel B. Ward, M. D., Dean of the College, presided, and upon the stage were seated the members of the Faculty, officers of the Alumni Association and prominent citizens.

The following was the

ORDER OF EXERCISES

DEAN SAMUEL B. WARD, M. D., PRESIDING

March—"The Presidents".....*Herbert*

Prayer—REV. WM. HERMAN HOPKINS, D. D.

Music—CAPRICE, "The Merry Lark,".....*Bendix*

Essay—EUGENE HOWARD BURNES

Music—"Polish Dance,".....*Thoma*

PRESENTATION OF CANDIDATES FOR DEGREE, BY DEAN WARD

CONFERRING DEGREES

BY GEORGE ALEXANDER, D. D.

Chancellor Ad Interim of the University

Music—FROM FLORAL SUITE, "Lilies,".....*Bendix*

ADDRESS TO THE GRADUATING CLASS

REV. GEORGE ALEXANDER, D. D.

Music—FROM FLORAL SUITE, "Pansies".....*Bendix*

Valedictorian—SAMUEL PIERSON BRUSH

REPORT ON PRIZES AND APPOINTMENTS

JOSEPH D. CRAIG, M. D.

Music—INTERMEZZO, "Nippono"..... *Lincoln*

[HOLDING'S ORCHESTRA]

The Graduating Class was as follows:

GRADUATING CLASS

Earl Erret Babcock.....	Deer River, N. Y.
Fred J. Barnet.....	Albany, N. Y.
William Edward Barth.....	Schaghticoke, N. Y.
John Adkins Battin.....	Watervliet, N. Y.
Hartley Edward Boorum.....	Interlaken, N. Y.
Samuel Pierson Brush.....	Troy, N. Y.
Eugene Howard Burnes.....	Amsterdam, N. Y.
William Henry Conger, Jr.....	Delmar, N. Y.
Joseph Davis.....	High Falls, N. Y.
James William Fleming.....	Little Falls, N. Y.
Nelson Kaufman Fromm, A. B.....	Albany, N. Y.
Earl William Fuller.....	Utica, N. Y.
Frank Garten	Albany, N. Y.
John Rouse Gillett, A. B.....	Albany, N. Y.
Edwin Francis Hagedorn.....	Gloversville, N. Y.
Rossllyn Philip Harris.....	Delanson, N. Y.
Stanton Perry Hull.....	Berlin, N. Y.
Jacob Travers Krause.....	Schenectady, N. Y.
Alexander Mitchell Loewenstein.....	Troy, N. Y.
John Joseph Aloysius Lyons, Ph. G.....	Albany, N. Y.
Robert Daniel Manning.....	Mohawk, N. Y.
Charles Gibson McGaffin, Ph. B.....	Cohoes, N. Y.
George Bolton McMurray.....	Troy, N. Y.
Robert Copeland Mooney.....	Gloversville, N. Y.
William Leslie Munson.....	Granville, N. Y.
John Paul O'Keeffe.....	Hadley, N. Y.
Charles Bates Phillips.....	Gloversville, N. Y.
George Philo Pitkin.....	Schroon Lake, N. Y.
Milton Woolley Platt.....	Albany, N. Y.
John Joseph Rainey.....	Troy, N. Y.

Edward John Riley.....	Rensselaer, N. Y.
Bert William Roy, A. B.....	Clyde, N. Y.
George Stephen Silliman, A. B.....	Stockport, N. Y.
Ray Ernest Smith.....	Rutland, Vt.
Aaron Sobel	Newburgh, N. Y.
Herbert Edgar Sperry.....	Penfield, N. Y.
William James Thompson.....	Oneonta, N. Y.
Joseph Edward Windbiel.....	Amsterdam, N. Y.
John Winegate	Princetown, N. Y.
Paul Virgil Winslow.....	Warwick, N. Y.

Dr. Craig presented the prizes. He read a report on the Vander Poel prize, endowed by Mrs. Gertrude W. Vander Poel, in memory of her husband, the late S. Oakley Vander Poel, for many years a professor in the college, stating that the prize, consisting of a clinical microscope and accessories, offered to the senior student passing the best bedside examination in general medicine, has been awarded to Dr. Samuel Pierson Brush.

The prize offered by Drs. Vander Veer and Macdonald for the best report of the surgical clinics was awarded to Dr. John Rouse Gillett. For the second best report of these clinics, the prize offered by Drs. Hailes and Morrow was awarded to Dr. Ray Ernest Smith, with honorable mention of Dr. Charles Bates Phillips.

The prize, consisting of an ophthalmoscope, offered by Dr. Merrill for the best report of the eye and ear clinics, was awarded to Dr. Jacob Travers Krause.

The Townsend Physiological prize endowed by the late Professor Franklin Townsend, Jr., M. D., was awarded to Mr. A. M. Alvarez, for passing the best examination in physiology at the end of the first year of study.

Dr. Boyd's prize to the student passing the best final examination in obstetrics was awarded to Dr. Hartley Edward Booroin.

The prize, consisting of a case of surgical instruments, offered to the senior student passing the best final examination, by Dr. W. J. Nellis ('79), in memory of his brother, the late Dr. T. W. Nellis ('91), was awarded to Dr. Jacob Travers Krause.

A prize, consisting of Gross' complete pocket case of instruments, offered by A. B. Huested & Co. to the first-year student passing the best final examination, was awarded to Mr. A. M. Alvarez, with honorable mention of Mr. Henry J. Noerling.

The Daggett prizes, consisting of sixty and thirty dollars,

respectively, for the best "anatomical specimens," were both awarded to Mr. George B. Randall.

The Daggett prize for the best "department irrespective of scholarship," consisting of sixty dollars, was awarded to Dr. John Rouse Gillett, and the second prize, consisting of thirty dollars, was awarded to Dr. George Stephen Silliman.

Appointed Essayist for 1909, William H. Davidson; Alternate, Burlin G. McKillip.

The following hospital appointments were announced:

Albany Hospital: Drs. Rosslyn P. Harris; William L. Munson; Samuel P. Brush; Eugene H. Burnes; George P. Pitkin; Fred J. Barnet; Earl W. Fuller; Joseph Davis; Jacob T. Krause and William H. Conger, Jr.

Pathologist to Albany Hospital: Dr. Roy C. Keigher ('07).

St. Peter's Hospital: Drs. Edward J. Riley; Nelson K. Fromm and John P. O'Keeffe.

Troy Hospital: Drs. George B. McMurray; Alexander M. Loewenstein; John J. Rainey and Joseph E. Windbiel.

Samaritan Hospital, Troy: Drs. Herbert E. Sperry; Paul V. Winslow and Robert D. Manning.

Ellis Hospital, Schenectady: Drs. Robert C. Mooney and John Wingate.

Cohoes Hospital: Dr. Aaron Sobel.

Faxton Hospital, Utica: Dr. James W. Fleming.

Homeopathic Hospital, Albany: Dr. Milton W. Platt.

Lying in Hospital, New York City: Dr. John A. Battin.

Binghamton State Hospital: Dr. William J. Thompson.

Taunton Insane Hospital, Mass: Dr. Charles G. McGaffin.

Lincoln Hospital, New York City: Dr. Bert W. Roy.

Willard State Hospital: Dr. Frank Garten.

Boston Emergency Hospital: Drs. Earl E. Babcock and William E. Barth.

Nassau Hospital, Mineola, Long Island: Drs. George S. Silliman and Hartley E. Boorum.

THE ALUMNI DINNER.

The thirty-fifth annual dinner of the Alumni Association was held at the "Ten Eyck," on Tuesday evening, May 19, 1908, at nine o'clock. About two hundred and thirty were present, including members of the Association, the guests, and members of the graduating class.

The evening was enlivened by a smoker and some character burlesques by vaudeville entertainers, and by amateur minstrels, participated in by members of the Association. The menus were elaborate, illustrated, and contained the songs of the Association.

Editorial

"I shall rejoice to furnish your zeal with fuller opportunities," Mr. Bulstrode answered; "I mean, by confiding to you the superintendence of my new hospital, should a maturer knowledge favor that issue, for I am determined that so great an object shall not be shackled by our two physicians. Indeed, I am encouraged to consider your advent to this town as a gracious indication that a more manifest blessing is now to be awarded to my efforts, which have hitherto been much withstood. With regard to the old infirmary, we have gained the initial point—I mean your election. And now I hope you will not shrink from incurring a certain amount of jealousy and dislike from your professional brethren by presenting yourself as a reformer."

Middlemarch.

GEORGE ELIOT.



Under this title Dr. William Browning, of Brooklyn, assisted by Drs. R. M. Elliott, E. G. Zabriskie, F. C. Eastman and F. Tilman, issue

"**Neurographs**"
 "A Series of Neurological Studies, Cases and Notes," at such times as material dictates. The publication is a small octavo of magazine form, is neatly and unostentatiously gotten up, is free from advertisements, and shows throughout a disinterested purpose of exploiting the specialty for which it is named, and of which its editors are practitioners. Two numbers have appeared, the second under the title "Huntington Number." The frontispiece is a neatly executed half-tone portrait of Dr. George Huntington, and the contributions comprise a complete historical, clinical and bibliographical survey of the eponymic form of chorea, to which his original description attracted attention. The various writers who discuss the subject in this *Festschrift*, if it may so be designated, write in approval of the terse and complete description of the disease in the original paper by Dr. Huntington, to which little has been added by the world-wide interest it aroused. Professor Dr. Adolf Strümpell, the well-known writer of Breslau, contributes "Zur Casuistik der chronischen Huntington'schen Chorea" to this publication and honor is also done the occasion by Drs. M. Lannois and J. Paviot, of Lyon, France, in a paper entitled "La Nature de la Lésion histologique de la Chorée de Huntington."

In 1899 Dr. Huntington attended the meeting of the State Medical Society in Albany, and the *ANNALS* was enabled to publish some statements he made about this disease. The pathognomonic features are hereditary transmission, adult life, progressive mental failure with a very decided suicidal tendency, and the disappearance of the disease from a family in which a generation escapes.

The fact is brought out in "Neurographs" that three physicians described the disease before Dr. Huntington: Dr. C. O. Waters, of Franklin, N. Y., in 1842; Dr. C. R. Gorman, of Pennsylvania, in 1848; and Dr. Irving Whitall Lyon, of Hartford, Conn., in 1863 or 1864. Dr. Huntington's original description was published in 1872.

Dr. Browning's "Neurographs" are a clever conception, and this condensed, accurate and complete presentation of a pathological entity is very satisfactory. The *ANNALS* hopes the good work may go on.

Little Biographies and the Eponymic Diseases

XXX. ABRAHAM COLLES

ABRAHAM COLLES, surgeon, was born in 1773 at Milmount, Ireland. He was descended from an English family of good means, long settled in County Kilkenny. During his education in the Kilkenny Grammar School, a flood swept away part of the house of a doctor named Butler, and carried a work on anatomy into a field near Colles's home. The boy picked it up; the doctor gave him the book, and this led to Colles's choice of a profession.

He entered Dublin University in 1790, refusing to be tempted from his chosen profession, though so great a mind as Edmund Burke tried to induce him to follow a literary and political career. Having obtained the diploma of the Irish College of Surgeons in 1795, Colles studied at Edinburgh and received the degree of Doctor of Medicine two years later. He went on foot from Edinburgh to London, there assisting Astley Cooper in dissection and attending the London hospitals. After his return to Dublin he became successively visiting physician to the Meath

Hospital, resident surgeon to Steevens's Hospital and visiting surgeon to the same hospital in 1813. In 1804 Colles became professor of anatomy and surgery in the Irish College of Surgeons and held the office thirty-two years. His ability as a lecturer greatly extended the reputation of the College and of the Dublin Medical School. He was twice president of the Irish College of Surgeons, in 1802 and 1830, and was offered a baronetcy in 1839, but declined it. He remained surgeon to Steevens's Hospital until 1841, and died on the sixteenth of November 1843. Dr. William Stokes who attended him in his last illness tells us that he died of a weakened and dilated heart, chronic bronchitis and emphysema of the lungs, with congestion of the liver, all occurring under the influence of a gouty constitution. Colles desired an autopsy to be carefully done, which, as Dr. Stokes observes, was the last great act in his medical career, showing an unchanging devotion to the medical science, and a pure desire to advance medicine.

Colles early became a masterly operator, being cool and dexterous, and singularly fertile in resource. When he first tied the subclavian artery for aneurysm, the operation had only twice been attempted in England, never in Ireland. He was the first man in Europe to tie the innominate artery, and he did it successfully. Colles had great perspicuity and the art of seizing on salient topics. He was cautious in criticism, clear in language and literary style, cheerful, generous and modest, despising charlatanism, and never losing an opportunity of frankly admitting his blunders. Colles was of about middle size, well proportioned and of dignified manner, with a shrewd, clear eye, a fine forehead and a decided mouth.

His principal works include a "Treatise on Surgical Anatomy," (Dublin, 1811); "Practical Precepts on Injuries of the Head," (Dublin, 1824); "Practical Observations on Venereal Disease and on the Use of Mercury" (Dublin, 1837); and a paper "On the Fracture of the Carpal Extremity of the Radius," which appeared in the *Edinburgh Medical and Surgical Journal* in 1814. In this paper were first described the peculiar phenomena, resulting from such a fracture, which had escaped the notice of surgeons before his time, notwithstanding its comparative frequency. The name of Colles is so closely identified with this fracture, that it is known the world over as Colles's fracture.

It is in connection with his paper on venereal disease that he

made the following statement, which, on account of its truth, has been handed down as Colles's law: "That a child born of a mother who is without obvious venereal symptoms, and which, without being exposed to any infection subsequent to its birth, shows this disease when a few weeks old, this child will infect the most healthy nurse, whether she suckle it, or merely handle it and dress it; and yet this child is never known to infect its own mother, even though she suckle it, while it has venereal ulcers of the lips and tongue."

A few exceptions are reported to this law, so few and so inconclusive as rather more fully to establish its general applicability. It is probable that the system of the mother after the bearing of such children, is so modified as to render her incapable of receiving the disease. In a majority of these cases the mother has received a sort of protective inoculation, without having had actual manifestations of the disease.

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 STOKES, DR. WILLIAM In *Dublin Quarterly Journal of Medical Science*, 1846, I, p. 303.
 Reference Handbook of the *Medical Sciences*, Vol. VII, p. 630.
 Selections from the works of A. Colles, New Sydenham Society, London 1881, p. 252.

T. F. DOESCHER.

Scientific Review

THE OPHTHALMO- AND THE CUTANEOUS DIAGNOSTIC REACTIONS IN TUBERCULOSIS.

Under the title, "*Die Ophthalm- und Kutandiagnose der Tuberculose*," Wolff-Eisner writes a volume of two hundred pages, making the first number for the year of Brauer's *Beiträge zur Klinik der Tuberkulose* (1908, ix, i.).

It is a complete review of the new subject, less than a year old, of "local reaction" tuberculin tests and contains beside much original material. Over 500 articles have appeared since June, 1907, many of which have been reviewed by the author. He gives 245 references to articles on this and related subjects. The credit of originating the ophthlmo-tuberculin test has frequently been assigned to Calmette but Wolff-Eisner demonstrates

his own priority in suggesting its clinical use, and prefers the designation "conjunctival" to "ophthalmo-tuberculin" test, the term used by Calmette.

He recognizes the value of the subcutaneous tuberculin test but thinks it is not entirely devoid of danger besides producing severe general symptoms. The temperature must be carefully observed for some days before and after the test. The temperature is moreover not as accurate and delicate an index of the body's reaction to tuberculin as could be desired. The test cannot be readily given without certain apparatus for preparing dilutions and its field has been somewhat limited. All these disadvantages are overcome or diminished in the new local reaction tests.

The technique of the tests, the results of clinical observation and finally the theoretic considerations on which they are based as discussed in turn.

Technique of the cutaneous test. The skin is first rubbed with alcohol. The scarification need not be extensive and may be hardly more than a point. It may be made with any sharp instrument or with Pirquet's "Schaber." It is an advantage to have a platinum instrument since it is so readily disinfected. There is, however, very little risk of infection. It is unnecessary to do more than reach the superficial lymph vessels and it is an advantage not to draw blood. The scarification may be made through a drop of tuberculin previously placed on the skin, or the tuberculin may be applied after the scarification is made. A twenty-five per cent. solution of Koch's old tuberculin is used. Control vaccinations with sterile salt solution or with glycerin and carbolic acid solutions in the strength in which they are found in tuberculin (5 per cent., 0.1 per cent.) should be made as in certain individuals the skin is greatly irritated by the slightest traumatism. It is better to employ a separate lancet for the control test.

Technique of the conjunctival test. The patient's head should be tipped well back and the under lid should be supported for half a minute with the finger after the diluted tuberculin is dropped in the eye. The eye should not be rubbed afterward. Wolff-Eisner uses a freshly prepared one per cent. solution of Koch's old tuberculin in 0.8 salt solution and one drop is placed in the eye with a small glass pipette or dropper. The use of the purified tuberculin prepared by Calmette's method is considered

unnecessary. Calmette's one per cent. solution of purified tuberculin is in the author's opinion too strong and may do harm.

The course of the cutaneous reaction. In a positive reaction, after a few hours, a reddening appears which usually reaches its highest intensity between the twelfth and twenty-fourth hour. It may be moderate, marked or excessive, may disappear within forty-eight hours or last for weeks. There may be beside the hyperemia, exudation and infiltration causing the formation of a palpable papule.

The course of the conjunctival reaction. After six to twenty-four hours the conjunctiva begins to redden and in reactions of the mild grade nothing more is noticed. In reactions of the second grade the redness is more marked and there may be muco-fibrinous exudate. In the third grade reactions there are all the appearances of a severe conjunctivitis. When the reaction is very severe boric acid solutions or a combination of three per cent. cocain solution with a one-tenth per cent. solution of adrenalin is found useful by the author in relieving the discomfort.

He has observed no unfavorable results from the tests. At least 10,000 tests have been reported by other workers. In very few cases have harmful effects followed. Still much care must be used. The author does not consider ordinary conjunctivitis a contraindication. Tuberculosis of the eye is a contraindication and in most of such cases the test would be unnecessary. In this connection it is thought surprising that ophthalmologists using tuberculin in the treatment of tuberculosis of the eye did not discover the conjunctival reaction long ago. Diseases of the uveal tract, present or past, are contraindications and it is wise to ask the patient whether he has had such trouble with his eyes. In children there has sometimes been a lighting up of a phlyctenular conjunctivitis. This disease is almost always a scrofulous manifestation. It should be remembered that scrofulous children possess a hypersusceptibility to the poisons of the tubercle bacillus and only weak solutions should be employed in making the test if indeed it is used at all.

Failure to react to either test, in cases of undoubted tuberculosis the author considers an unfavorable prognostic sign, indicating that the organism lacks the capacity of reacting with its protective forces against the poisons of the disease. Those cases in the first stage of the disease, which failed to react,

have, in his experience, done badly. A much larger proportion of advanced progressive cases have failed to show reactions than those in the earlier stages.

The time of the appearance of the reaction, especially of the cutaneous reaction, is considered to have considerable prognostic value. A promptly appearing, severe reaction indicates a favorable prognosis. The more severe the reaction, the better are the prospects of cure. A quickly occurring mild reaction or the failure to react suggest an unfavorable prognosis. A delayed mild reaction indicates a healed or latent lesion. These principles apply also to the reactions from the subcutaneous injection of tuberculin.

Pirquet, on account of the frequency with which adults react to the cutaneous test, has considered its field of usefulness limited largely to the study of tuberculosis in children. Wolff-Eisner has found that many adults do not react though a much larger proportion do than when the conjunctival test is employed. He considers that the cutaneous test reveals the presence of latent or healed tuberculosis while the conjunctival test shows the presence of more or less active lesions. The great value of the cutaneous test is as an aid to prognosis. The conjunctival test is a much more valuable diagnostic procedure.

Wolff-Eisner's theory of the mechanisms of tuberculin reactions is substantially as follows: Individuals with tuberculous lesions have, all the time, in their blood bacteriolysins to the tubercle bacillus. All tuberculins contain at least fragments "splitter" of tubercle bacilli; when these come in contact with the patient's bacteriolysins, endotoxins are set free from these fragments of bacilli and cause the phenomena of the reaction. Analogous phenomena have been observed in the study of immunization to pollen in hay fever and in Pirquet's study of the "serumkrankheit" as well as in the investigation of immunity in various acute infectious diseases. It is noted that the frequency with which convalescent typhoid fever patients react to the conjunctival tuberculin test may be due to the superabundant production of bacteriolysins, so abundant that they affect not only the typhoid bacillus but other bacteria as well.

It is impossible in this abstract to do more than refer to many of the interesting phases of the subject which the author has considered in detail. Among them are the confirmation of the tests by autopsy findings, the significance of reactions to re-

peated tests, the great question of hypersusceptibility and immunity considered in the light of recent studies regarding anaphylaxis and the serum disease, the use of the reactions in pediatrics, dermatology, ophthalmology, gynecology, psychiatry and in veterinary medicine. The special section of more than fifty pages in which the diagnosis of early tuberculosis is discussed from all points of view also deserves careful reading. The author believes that it is still too early to come to a final judgment as to the precise relative value of the various tuberculin tests.

ARTHUR T. LAIRD.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR APRIL, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption.....	16	14	26	14	17
Typhoid Fever.....	4	0	1	1	0
Measles.....	0	5	1	0	4
Scarlet Fever.....	1	0	0	0	7
Whooping-cough.....	0	1	0	0	2
Diphtheria and Croup.....	3	2	1	5	2
Grippe.....	2	1	2	1	0
Pneumonia.....	20	13	16	12	14
Broncho-pneumonia.....	3	7	3	5	5
Bright's Disease.....	15	17	20	14	17
Apoplexy.....	13	8	7	9	11
Cancer.....	12	13	9	7	7
Accidents and Violence.....	8	4	4	0	2
70 years and over.....	37	37	30	38	32
1 year and under.....	14	23	19	18	19
Total deaths.....	183	158	157	152	161
Death rate.....	22.24	17.30	19.09	18.48	19.57
Death rate less non-resi- dents.....	.....	14.78	18.36	15.92	18.36

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital.....	8	7	7	9	14	4	7	12	8	8
Child's Hospital.....	0	0	0	0	1	0	0	0	0	0
Home for Aged.....	2	0	0	0	0	1	0	0	1	0
County House.....	5	1	0	0	4	0	0	4	4	1
Dominican Convent.....	1	0	0	0	0	0	0	0	0	0
Home for Friendless.....	1	0	1	1	1	0	0	0	2	0
Homeopathic Hospital....	3	0	2	1	1	0	2	0	2	0
Hospital for Incurables....	2	0	1	0	0	0	1	0	0	0
Little Sisters of the Poor..	0	0	1	0	0	1	1	0	3	1
Penitentiary.....	0	1	1	0	0	0	0	0	0	0
Public Places.....	0	2	1	0	0	0	0	0	2	1
St. Margaret's House.....	0	0	3	2	0	1	1	0	3	0
St. Peter's Hospital.....	3	1	5	0	4	0	7	4	0	1
Sacred Heart Convent.....	0	0	0	0	1	0	0	0	2	0
St. Frances De Sayles Orphan Asylum.....	0	0	0	0	0	0	0	0	2	0
Births.....									90	
Marriages.....									5	
Still and premature births.....									6	

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were 239 inspections made, of which 171 were old houses and 68 new houses. There were 49 iron drains laid, 28 connections to street sewers, 34 tile drains, 30 cesspools, 59 wash basins, 48 sinks, 59 bath tubs, 32 wash trays, 2 trap hoppers and 97 tank closets. There were 148 permits issued, of which 129 were for plumbing and 19 for building purposes. There were 55 plans submitted, of which 7 were of old buildings and 48 of new buildings. There were 21 houses tested on complaint, 1 with blue, or red 5 with peppermint and 15 water tests. 43 houses were examined on complaint and 56 were re-examined. 20 complaints were found to be valid and 23 without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid Fever.....	8	2	6	8	4
Scarlet Fever.....	20	5	22	4	139
Diphtheria and croup.....	24	7	6	41	29
Chickenpox.....	6	1	4	1	9
Measles.....	25	201	3	15	227
Whooping-Cough.....	0	0	1	0	0
Consumption.....	4	0	0	19	35

Contagious Diseases in Relation to Public Schools.

	<i>Reported</i>		<i>Deaths</i>	
	D.	S. F.	D.	S. F.
Public School No. 1.....	1	2	..	..
Public School No. 2.....	..	1	..	..
Public School No. 3.....	..	1	..	..
Public School No. 4.....	1	5	..	1
Public School No. 6.....	..	2	..	..
Public School No. 7.....	..	1	..	..
Public School No. 8.....	1	1	..	..
Public School No. 11.....	..	1	..	..
Public School No. 12.....	..	1	..	..
Public School No. 13.....	..	2	..	..
Public School No. 14.....	..	5	..	1
Public School No. 15.....	..	2	..	..
Public School No. 16.....	..	4	..	..
Public School No. 17.....	..	4	..	1
Public School No. 21.....	3	3	..	1
Public School No. 22.....	..	2	..	..
Public School No. 25.....	..	2	..	..
High School.....	..	7	..	1
Christian Brothers Academy.....	..	2	..	..
St. Joseph's Academy.....	..	1	..	..
Lady of Angels School.....	..	1	..	..
Academy Holy Cross.....	..	1	..	..

Number of days quarantine for diphtheria:

Longest..... 46 Shortest..... 6 Average..... 20 5-16

Number of days quarantine for scarlet fever:

Longest..... 60 Shortest..... 6 Average..... 27 59-62

Fumigations:

Houses..... 116 Rooms..... 407

Cases of diphtheria reported..... 29

Cases of diphtheria in which antitoxin was used..... 28

Cases in which antitoxin was not used..... 1

Deaths after use of antitoxin..... 2

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive.....	6	6	3	35	25
Initial Negative.....	20	20	24	27	113
Release Positive.....	1	00	9	112	39
Release Negative.....	15	4	10	132	49
Totals.....	42	30	46	306	229

Examination for tuberculosis:

Initial Positive.....	..	..	..	4	4
Initial Negative.....	..	..	..	11	13

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	16
Factory certificates issued to children.....	6
Children's birth records on file.....	22
Number of written complaints of nuisances.....	80
Privy vaults.....	9
Plumbing.....	26
Other miscellaneous complaints.....	45
Total number of dead animals removed.....	750
Cases assigned to health physicians.....	76
Calls made.....	380

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK—STATISTICS FOR MAY, 1908. Number of new cases, 147; *classified as follows*: Dispensary patients receiving home care, 8; district cases reported by health physicians, 6; charity cases reported by other physicians, 60; moderate income patients, 73; old cases still under treatment, 66; total number of patients under nursing care during the month, 213. *Classification of diseases* (new cases): Medical, 25; surgical, 17; gynecological, 1; obstetrical work of the Guild, 50 mothers and 44 infants under professional care; dental, 4; eye and ear, 2; skin, 3; throat and nose, 1; contagious diseases in the medical list, 8; removed to hospitals, 6; deaths, 13.

Special Obstetrical Department—Number of obstetricians in charge of cases, 2; medical students in attendance, 2; Guild nurses, 6; patients, 4; visits by attending obstetricians, 4; by the medical students, 20; by the Guild nurses, 44. Total number of visits for this department, 68.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,456; for professional supervision of convalescents, 217. Total number of visits, 1,673. Cases were reported to the Guild by two of the health physicians, by forty-three other physicians and by four dentists. Seven graduate nurses and four assistant nurses were on duty.

ALUMNI RE-UNION—AMERICAN MEDICAL ASSOCIATION—On Wednesday evening, June 3, the graduates of Albany Medical College met at the Stratford hotel, Chicago, and after a delightful dinner talked over old times. The following attended:

Joseph Elliott Colburn, Chicago, '77; Isaac N. Albright, Chicago, '84; Israel Madison Slingerland, Fayetteville, N. Y.; D. T. Fairchild, Des Moines, Iowa, '68; M. L. R. Lewi, New York City, '80; E. A. Vander Veer, Albany, N. Y., '98; C. G. McMullen, Schenectady, N. Y., '98; Chas. B. Mallery, Aberdeen, S. D., '86; T. D. Crothers, Hartford, Conn.,

'65; H. L. Bower, Greenville, Mich., '64; I. D. LeRoy, Pleasant Valley, '83; C. J. Simons, Chicago, Ill., '67; Z. F. Dunning, Philmont, N. Y., '88; J. E. Sadlier, Poughkeepsie, N. Y., '87; Frederic W. Loughran, New York, '90; H. W. Clement, Chicago, Ill., '90; Walter G. Murphy, Hartford, Conn., '90; A. Vander Veer, Albany (Hon.), '69; Leo H. Neuman, Albany, '91; A. J. Bedell, Albany, '01.

TUBERCULOSIS HOSPITAL.—The work on the new hospital for tuberculosis at Kenwood Heights, Albany, has started.

HOSPITAL PATIENTS GO TO ST. CHRISTINA'S HOME.—The patients of the Child's Hospital, on Elk Street, left yesterday for St. Christina's Home, at Saratoga, where they will spend the summer. There were fifty children, twelve nurses and two sisters, who left the Union station. Carriages conveyed them from the hospital to a private car on the D. & H. railroad, where everything had been arranged for their comfort. St. Christina's Home is located on Ballston Avenue, Saratoga, and is open from June to October.

ORPHANS' DAY.—June 10th, Orphans' Day was celebrated in a most enthusiastic manner. Over two hundred automobiles conveyed the children around the city and to a suburban resort where refreshments were served.

ARMY MEDICAL DEPARTMENT EXAMINATIONS.—The act of April 23, 1908, reorganizing the Medical Corps of the Army, gives an increase in that corps of six Colonels, twelve Lieutenant-Colonels, forty-five Majors, and sixty Captains or First Lieutenants, and establishes a Medical Reserve Corps as an adjunct to the Medical Corps. Under this recent act, the Lieutenants of the Medical Corps are promoted to Captain after three years' service instead of five, and the increase in the higher grades insures promotion at a reasonable rate all through an officer's military career. Furthermore, applicants who are found qualified in the preliminary examination are appointed First Lieutenants of the Medical Reserve Corps and ordered to the Army Medical School in Washington, D. C., for eight months' instruction.

The Medical Corps.—Preliminary examination for appointment in the Medical Corps will be held on August 3, 1908, and formal applications should be in possession of the War Department prior to *July 1st*. The applicant must be a citizen of the United States, between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and must have had at least one year's hospital training or its equivalent in practice. The examination will be held concurrently throughout the country at points where boards can conveniently be assembled, and due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general preliminary education may be

omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

The large number of vacancies created in the Medical Corps by recent legislation makes it certain that *all* successful candidates will be recommended for a commission for several years to come.

The Medical Reserve Corps.—It is desired to obtain and maintain a list of qualified medical men all over the country who are willing to serve as medical officers in time of emergency, and to such men the President is authorized to issue commissions as First Lieutenants, Medical Reserve Corps. It is recognized that it will be necessary to place only a limited number of these officers on the active list in time of peace, and it is hoped that young medical men throughout the country and medical officers of the militia of the various States may be sufficiently interested to secure positions on the Medical Reserve Corps list.

An applicant must be between twenty-two and forty-five years of age, a citizen of the United States, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and must have qualified to practice medicine in the State in which he resides. Examinations will be held in the near future and will embrace the practical medical subjects.

Full information concerning the Medical Corps and the Medical Reserve Corps may be procured upon application to the Surgeon-General, U. S. Army, Washington, D. C.

THE MEDICAL ERA'S GASTRO-INTESTINAL EDITIONS.—The *Medical Era*, St. Louis, Mo., will issue its annual series of gastro-intestinal editions during July and August. In these two issues will be published between forty and fifty original papers of the largest practical worth, covering every phase of diseases of the gastro-intestinal canal. Sample copies will be supplied readers of this journal.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.—President Roosevelt has accepted the presidency of the International Congress on Tuberculosis.

Dr. Edward L. Trudeau has been elected honorary President of the Congress, and Vice-President Fairbanks, Speaker Cannon and the Governors of the States have been asked to serve as Vice-Presidents. The German Committee of Arrangements for the Congress has a membership of over one hundred and fifty. Sixty-four members have been appointed to arrange for the part Belgium will take in the Congress and in the exhibition to be held in connection with it.

THE OTSEGO COUNTY MEDICAL SOCIETY held its semi-annual meeting at Cooperstown, N. Y., June 9, 1908. Drs. Brownell, Moon, Swanson and M. Latcher read papers.

PERSONALS—Dr. C. H. MOORE (A. M. C., '88) will sail for Europe July 4th.

—Dr. SPENCER L. DAWES, of the college, sailed for Europe on the Zealand June 20th. Holland, France and England will be visited.

—Dr. T. D. CROTHERS (A. M. C., '65), of Hartford, Conn., editor of the *Journal of Inebriety*, was elected President of the Medical Editor's Association for the coming year.

—Dr. T. F. DOESCHER (A. M. C., '06) has left the Bender Laboratory to be Dr. Vander Veer's assistant.

—Dr. J. L. BENDELL (A. M. C., '07) has taken up his work as assistant pathologist, Bender Laboratory.

MARRIED—Dr. SHERWOOD LE FEVRE (A. M. C., '91) and Miss Ada Becker, of Central Bridge, N. Y., were married June 24th. Dr. Le Fevre is doing eye, ear, nose and throat work in Glens Falls, N. Y.

—Dr. F. J. ATWELL (A. M. C., '07), of Troy, N. Y., and Miss Helen Williams, of Cooperstown, N. Y., were married May 28, 1908.

DIED.—Dr. ENOCH VINE STODDARD (A. M. C., '63) died at his home, Rochester, N. Y., June 6th, after a long illness, aged 68. He was formerly President of the State Board of Charities.

—Dr. ANDREW J. RONAN (A. M. C., '97) died May 27th, in Albany. After graduation he entered the United States service and was sent to the Philippines, where he served with considerable success.

In Memoriam

OBEDIAH TIBBITTS ELLISON, M. D.

Such an appreciative and feeling commentary on the life of Dr. Ellison is published in the local newspaper at Coudersport, that the ANNALS reproduces it in full, together with the poem by Carleton which is appended to the sketch.

Dr. Obediah Tibbitts Ellison, who died March 27, 1908, at Coudersport, Penn., was born in Sullivan County, N. Y., November, 1826, received his early education in the schools and academy at Monticello, N. Y., and graduated from the Albany Medical College, at Albany, N. Y., June 10, 1856.

The same year the young doctor started with his horse and sulky, his only possessions, to find a place to locate. The first stop was at Ellensburg with friends of a relative who advised him to go to Oswayo—but after reaching there, two days later, and staying a short time, he decided, at recommendation of an older physician at Oswayo to go to Coudersport. The old doctor also urged him to raise the price of visits in the country to one dollar each—and this Dr. Ellison did, being the first to charge that amount.

It was election day, November, 1856, when the doctor arrived in Coudersport and he spent his first night at the hotel on North Main Street, which stood on the site of what is now known as "the old Crosby place."

Practice began at once, the first important case coming the first of the year when Isaac Benson had typhoid fever. Dr. Ellison was both physician and nurse and when Mr. Benson, who was a Senator, was

convalescing but still confined to his bed—and it became necessary for him to go to Washington to cast his decisive vote for Simon Cameron for United States Senator, Dr. Ellison accompanied him during the trip, never leaving his side the three weeks he was away, and it was undoubtedly due to his faithful care and medical attendance that Mr. Benson did not have a relapse, and Dr. Ellison at once made a reputation for himself.

Dr. Ellison afterward boarded at the Schoomacher hotel where the McCarthy House now stands, and there he first met Miss Susan West, a niece of Mrs. Schoomacher. December 7, 1861, about a year afterward, they were married at the old West homestead at Halsey Valley, N. Y.

They drove in a cutter from there to Coudersport on a wedding trip, stopping at Elmira to buy their household goods, and went to housekeeping in the home on Main Street, corner of First, which is one of the oldest houses in town. Mrs. Ellison died about twenty years ago.

Shortly after the battle of Gettysburg the doctor, with P. A. Stebbins and D. M. Glassmire, decided to join the army. Dr. Ellison served as assistant surgeon for a time but did not enlist.

In 1866 deceased went into the drug business with M. S. Thompson and they were partners about two years and a half. Later Dr. Ellison went west with A. G. Olmsted and they were out on Lake Michigan at the time of the great Chicago fire. When they returned Judge Olmsted gave Dr. Ellison a shawl which they had used on the trip and this the doctor kept and wore himself even up to within a few days of his death.

About 1875 he purchased the grist mill and saw mill above town owned by Chauncey Crittenden, and was actively engaged in the milling business until 1906. He was particularly interested in machinery and loved guns and ammunition, and it was well that he did understand the use of firearms for his "ride" had a sixty-mile radius and Potter County was wild in those days. He has been known to ride to Kettle Creek and back, a distance of sixty miles, in one day, and no night was too wild, no stream too swollen for him to ford, no case too poor for him to accept, if he could help and heal suffering ones.

Dr. Ellison was a progressive man, interested in all that took place around him, and it was never with the spirit of gossip that he knew interesting things about every one with whom he was associated. When Dr. Ellison was in school at Monticello, N. Y., Dr. Daniel B. Roosa, one of the founders and only president of New York Post-Graduate Medical School and Hospital was one of the "younger boys."

It was with regret that Dr. Ellison read of the death of this noted eye and ear doctor less than a month ago, for, as Dr. Ellison said "he had watched Dr. Roosa's career through life and from one of the brightest little boys he had ever known he had become a famous professor, writer, and specialist."

This was the keynote of Dr. Ellison's character—if we may say it—his loyal and unselfish interest in all those with whom he came in contact.

His absolute freedom from petty jealousies, his quickness to recognize merit in others, put him in position to reach the highest knowledge himself, but of this he seemed wholly unconscious. He was a generous man who never spoke of his benevolence and more than that he could see no

reason for doing otherwise. One of his known acts of generosity in recent years was the giving away of 600 bushels of potatoes, five bushels each to one hundred and twenty poor families.

The funeral services of the dearly-loved man was held at the Presbyterian church Sunday at 2.30 P. M. and was one of if not the most largely attended funeral ever held here. Rev. E. McClellan Snodgrass, of the Methodist church, and Rev. Harold Stewart, of the Baptist church, conducted the services. Rev. Stewart preached one of the most eloquent addresses ever delivered in Coudersport.

Interment was in Eulalia cemetery. The active pall bearers were six fellow physicians of deceased—Drs. E. H. Ashcraft, F. C. Gorham, R. B. Knight, P. L. Hatch, W. H. Tassell, F. G. Reese. The honorary pall bearers were Judge A. G. Olmsted, M. S. Thompson, Benjamin Rennells, Addison Stephens, A. B. Mann, John R. Groves.

Dr. Ellison is survived by one daughter, Miss Elizabeth Ellison, and two brothers—Nathaniel, who lives near Elmira, and Thomas, of Binghamton. On account of illness neither of these gentlemen was able to attend the funeral. Mrs. Ambrose Elston, of Binghamton, a sister of the late Mrs. Ellison, arrived here Saturday and remained until to-day.

THE COUNTRY DOCTOR.

BY WILL CARLETON.

There's a gathering in the village, that has never been outdone,
 Since the soldiers took their muskets to the war of sixty-one;
 And a lot of lumber wagons near the church upon the hill,
 And a crowd of country people, Sunday dressed and very still.
 Now each window is pre-empted by a dozen heads or more,
 Now the spacious pews are crowded from the pulpit to the door;
 For with coverlet of blackness on his portly figure spread,
 Lies the grim old country doctor, in a massive oaken bed.
 Lies the fierce old country doctor,
 Lies the kind old country doctor.
 Whom the populace considered with a mingled love and dread.

Maybe half the congregation now of great or little worth,
 Found this watcher waiting for them, when they came upon the earth.
 This undecorated soldier of a hard unequal strife
 Fought in many stubborn battles with the foes that sought their life.
 In the night time or the day time he would rally brave and well,
 Though the summer lark was piping, or the frozen lances fell;
 Knowing if he won the battle, they would praise their Maker's name,
 Knowing if he lost the battle, then the doctor was to blame.
 'Twas the brave old virtuous doctor
 'Twas the good old faulty doctor
 'Twas the faithful country doctor fighting stoutly all the same.

When so many pined in sickness he had stood so strongly by,
 Half the people felt a notion that the doctor couldn't die;
 They must slowly learn the lesson how to live from day to day,
 And have somehow lost their bearings—now this landmark is away.
 But perhaps it still is better that his busy life is done;
 He has seen old views and patients disappearing one by one;
 He has learned that Death is master both of Science and of Art;
 He has done his duty fairly and has acted out his part.
 And the strong old country doctor,
 And the weak old country doctor,
 Is entitled to a furlough for his brain and for his heart.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession throughout the World. Edited by W. T. LONGCOPE, M. D., Philadelphia, U. S. A., with the collaboration of WM. OSLER, M. D., Oxford, JOHN H. MUSSER, M. D., Philadelphia, A. MCPHEDRAN, M. D., Toronto, FRANK BILLINGS, M. D., Chicago, CHAS. H. MAYO, M. D., Rochester, THOS. H. ROTCH, M. D., Boston, JOHN G. CLARK, M. D., Philadelphia, JAMES J. WALSH, M. D., New York, J. W. BALLANTINE, M. D., Edinburgh, JOHN HAROLD, M. D., London, RICHARD KRETZ, M. D., Vienna; with regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume I, Eighteenth Series, 1908. Philadelphia and London. J. B. Lippincott Company.

The Paratyphoid Fevers is the title of a valuable article by J. C. WILSON, M. D., of Philadelphia. He defines them as a group of infectious febrile diseases, caused by organisms intermediate between bacillus typhosus and bacillus coli and presenting clinical phenomena of enteric fever. The features of the reported cases are very variable; the diagnosis rests upon the failure of the blood serum to agglutinate. (b) Typhosus and its power to agglutinate. (b) Paratyphosus or (b) Paracoli. The writer then recites a case observed on his service at Jefferson Hospital as an interesting example of the disease.

The Progress of Medicine during the Year 1907, constitutes a large part of this volume, divided under the headings: *Treatment, Medicine, and Surgery*, all of which is well worth reading.

The dechloridization theory in renal dropsy seems in practice to be productive of good results. In eggs, unseasoned meats and unsalted butter, bread without salt, fresh water fish, potatoes, fresh vegetables, fruits and chocolate. We have foods that are nearly salt-free while the salt content of milk is very low.

Considerable space and several good illustrations are devoted to the consideration of Surgery of the Breast; JAS. C. BLOODGOOD, M. D., is convinced that our attitude should be more hopeful. He states: In attacking carcinoma anywhere in the body the first plan in the operation should be complete eradication as is anatomically possible provided that the mortality of the operation and insurance of a cure justify the mutilation. In carcinoma of the breast properly performed the mortality is insignificant (17), the mutilation slight and in my experience, the functional use of the arm, if the clanicular bundle of the fectoralis major is left, sufficiently good for all practical purposes, and the increasing number of cases justifies the procedure.

H. D. C.

Heart Disease and Blood Pressure. BY LOUIS FAUGERES BISHOP, A. M., M. D. Second Edition. E. B. Treat and Company. 1907.

We have seldom read a more disappointing book than this. The titles of the chapters look promising, and one attacks the work with the hope of gaining valuable information. Careful reading leaves the reader in a state of mental confusion which analysis shows to be due to the confusion of the book itself. The style throughout is desultory in the extreme, and the few facts contained in the work are not new, and are like islands of truth in a sea of verbiage. We can conscientiously advise the readers of the ANNALS to allow the work to sink into a well-merited obscurity.

G. B.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Professor EDMUND VON NEUSSER, M. D. Authorized English translation by ANDREW MACFARLANE, M. D. Part I. Dyspnoea and Cyanosis. New York. E. B. Treat and Company. 1907.

This is a small book of two hundred odd pages which treats, in a detailed manner, of the causes which produce dyspnoea and cyanosis. The book is divided into two groups of chapters, the first dealing with dyspnoea and cyanosis in disorders of the respiration, the second with dyspnoea and cyanosis in disorders of the circulation. The first section contains, besides a discussion of the various respiratory diseases associated with dyspnoea and cyanosis, a general discussion of the pathological physiology of the two symptoms. The second section considers not only diseases of the heart and vessels as causes of dyspnoea and cyanosis, but also diseases

of the gastro-intestinal tract, infectious diseases, toxæmias, and general diseases. The book is written with that attention to minutiae which is characteristic of Neusser, and is a pretty complete exposition of the causes and clinical associations of the symptoms discussed. It should be of special value in obscure cases of dyspnoea or cyanosis in which the practitioner wishes to refresh his memory as to the out-of-the-way causes of these conditions. The translation is acceptably done. The value of the work would be enhanced by an index.

G. B.

Psychology Applied to Medicine. Introductory Studies. By DAVID J. WELLS, M. D., Philadelphia. F. A. Davis Company. 1907.

In a small work of this size, less than 150 pages, one cannot expect a very detailed exposition of the subject of psychology. In fact the work is quite sketchy as a whole, though certain chapters, especially those dealing with the psychology of vision and with hypnotism, are much more detailed than the rest of the book. The remaining chapters deal with reason and instinct, habit, sensation, psychotherapeutics, and the psychic element in medicine. The book is written in a pleasing style, and may be recommended to those desiring a short outline of the subject.

G. B.

A Text-Book of Physiology. By ISAAC OTT, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Second Revised Edition. Illustrated with 393 Half-tone Engravings, many in Colors. Royal Octavo, 815 pages. Bound in Extra Cloth. Price, \$3.50, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

This second edition appears considerably enlarged by the addition of two hundred and forty pages, mainly with reference to the chapters of electrophysiology, sympathetic system and special senses. A small chapter on Evolution has been contributed by Dr. Fischelis. The general style of the book remains unchanged from that of the first edition and upon the whole the revision may be said to have markedly enhanced the value of the work. The main strength of the volume lies in the chapters mentioned above which have been almost entirely rewritten. One might almost wish that in the next revision the remaining part would undergo a similar change in the hope that much which is strictly physiological chemistry would be left out. In this the author shows his weakness and many tests for substances in urine, blood, milk, etc., should be omitted since they are incorrect e. g. indican p. 405. Thus room could be made for the elaboration of some few important topics which now receive slight notice e. g. secretion of urine and the coagulation of the blood. The name of the author Hammarsten is misspelled on pp. 192 and 194, and a theory is attributed to him which he did not advance but which is a mixture of the three or four prevalent notions on the subject. The recent view of Folin

as to the formation of urea from the amino acids is wrongly credited to Abderhalden. In that part of the subject which deals with the so-called muscle and nerve physiology the book is excellent and aided by the many illustrations, it should serve as an admirable help to students engaged in the study of these branches.

H. C. J.

SURGERY

Edited by Albert Vander Veer, M. D. and Arthur W. Elting, M. D.

Concerning the Value of Arthrodesis. (Ueber den Wert der Arthrodesis.)

O. VULPIUS. *Münchener medizinische Wochenschrift*, No. 7, 55 Jahrgang.

Inasmuch as it is possible to replace some forms of orthopedic apparatus by the operative stiffening of the joints, it seems desirable to consider the advantages and disadvantages of this procedure. A few points, however, should be borne in mind in this connection, and one of them is that all joint motion must, of course, be sacrificed and it must be apparent before this procedure is undertaken that a stiff joint is very much more useful and comfortable than a so-called flail joint. Ordinarily orthopedic surgery is especially concerned in the mobilization of joints rather than the induction of a stiffening of the joints. Tendon transplantation has done a great deal to render orthopedic apparatus unnecessary and to improve the condition of joints, which might hitherto have been regarded as desirable for arthrodesis. As a result of this, interest in this operation has waned decidedly during the past few years and one finds but comparatively few references to it in recent literature.

The writer has had an opportunity to employ arthrodesis in a considerable number of cases and has studied the results with especial care. The first question to be settled is, when is arthrodesis indicated? It should never be considered until every hope of a return of active motion has gone, and at least one year should elapse after the occurrence of the acute polyomyelitis. It should furthermore be perfectly definitely settled that a stiff joint is decidedly preferable to a flail joint. In the ankle arthrodesis is indicated when as a result of complete paralysis of the muscles of the lower leg there is no stability whatever at the ankle joint. Tenodesis and, fasciodesis are operations which may materially assist arthrodesis. Both of these operations consist in a periosteal fixation of tendons or fascia about the joint, thus contributing to the stability of the joint. Bilateral arthrodesis of the ankle joint has been frequently performed by the writer and with most satisfactory results.

The knee joint is suitable for arthrodesis only when there is a very marked flail condition or when there has been a pronounced contracture. In such instances it should only be done upon one side, for bilateral arthrodesis at the knee joint is not a desirable condition.

Arthrodesis of the hip joint is an operation that has been comparatively infrequently performed and is never indicated in a unilateral paralysis

of the hip. In a bilateral paralysis arthrodesis upon one side may be of a great deal of benefit. It allows the patient the power of locomotion and the upright position.

Arthrodesis of the shoulder joint is also a satisfactory operation in certain instances, especially when the muscles of the forearm and hand and shoulder girdle have been preserved.

In the performance of the operation of arthrodesis the joint ends must be very well freshened and the bone substance should be laid bare at least to a considerable extent. The writer briefly discusses the technique of arthrodesis of each of the joints, which is practically as described in most operative surgeries. In the hip joint he dislocates the head, removes the cartilage from the head as well as from the acetabulum, and then reduces the dislocation.

In arthrodesis of the shoulder joint the cartilage is removed from the head of the humerus, as well as the glenoid cavity, and the arm is put up in almost a right angled elevation and is kept in this position for about three months.

The object of the operation is, of course, a bony ankylosis, but this is by no means always secured. In from fifty to sixty per cent. of cases of arthrodesis of the ankle joint a firm ankylosis is secured; in from twenty to twenty-five per cent of partial ankylosis, while in from fifteen to twenty per cent. the operation is not successful. In about seventy-five per cent. of cases of arthrodesis of the knee joint fibrous or bony ankylosis is secured. In the knee joint the possibility of subsequent contracture has to be carefully considered. Fibrous ankylosis is almost always obtained at the hip joint and a bony or solid fibrous ankylosis is usually obtained in about eighty per cent of the cases at the shoulder joint. The writer's results in arthrodesis of the shoulder joint have been especially satisfactory so far as function is concerned.

In conclusion, the writer believes that the operation of arthrodesis in carefully selected cases is of a very great deal of value and should always be considered in connection with tendon transplantation.

DERMATOLOGY

Edited by Frederic C. Curtis, M. D. and Harry W. Carey, M. D.

The Treatment of Syphilis with Arsenic. (Die Behandlung der Syphilis mit Arsenik.)

O. ROSENTHAL *Berliner klinische Wochenschrift*, No. 3, 1908.

The author believes that while arsenic is the most effective agent in the treatment of syphilis it is not ideal. Idiosyncrasy in some cases excludes its use, its action is not perfectly understood and when given intramuscularly, the most effective way, it may produce untoward effects which cannot be foreseen. The subcutaneous method of giving arsenic insures a greater tolerance than medication per os. The drug given in this way reaches the blood-stream quicker, the actual amount taken up is known,

the gastro-intestinal tract is not irritated so much and the effect is quicker and stronger, which means that the duration of the treatment is shorter.

Rosenthal believes that arsenious acid is the most suitable for subcutaneous use and recommends the following solution:

R	Acid Arseniosi	0.8
	Acoïn	0.12
	Aqua Dest.	40.00
	Thymol	Q.S.

The thymol is used to keep the solution sterile. As the Arsenic in this strength dissolves slowly it is necessary to boil it in a cotton stoppered flask for one-half hour.

The injections are made into the trunk and extremities a new place being chosen for each injection. The initial dose is .002 grams and is repeated every third day, the dose being doubled each time until .016 grams is reached; this is the maximum dose.

During the treatment the diet should be free from uncooked fruit and irritating food to prevent gastric disturbances.

The injections cause very little pain. Infiltrations at the site of injection occur occasionally but are not of any consequence. Toxic symptoms seldom follow and when present are not sufficient to require an antidote as the excretion of the arsenic is so rapid. From a series of sixty cases the writer selects a few in which the treatment with arsenic produced specially favorable results. Some cases however particularly those with purely secondary manifestations of the disease-roseolae, mucous patches, etc., and one case of Psoriasis palmaris did not respond to the treatment. The arsenic will not abort the secondary eruption, its action on the chancre is slight and it has no preventative effect. The latent period is not prolonged and relapses following its use are frequent. It has no direct effect on the spirochaete pallida.

The dose must be governed by the degree of tolerance acquired, in some cases it is safe to exceed the maximum dose of .016 grams. The writer has observed that fat individuals do not acquire tolerance rapidly.

A comparison of atoxyl, which has been used considerably in the treatment of syphilis, with arsenious acid shows, in the author's opinion, that the former has a more intense action and is followed more frequently by toxic symptoms, in some series as high as sixty per cent. Blindness due to optic atrophy occurs frequently and is believed to be due to the anilin component of the atoxyl, arsenious acid is excreted more quickly than atoxyl, tolerance is acquired more easily and it is more effective as the arsenic is in the nascent state.

In conclusion Rosenthal believes that arsenic in the treatment of syphilis will not replace mercury but that its use is indicated in cases which do not respond to mercury and potassium iodide. It can be used also, with good effect, when the lesions are not healed by the prolonged administration of mercury or when there are frequent relapses. It is most effective in the treatment of stubborn, lichenoid and tubercular syphilides and in the neurasthenia and anemia which frequently accompany the disease.

H. W. C.

Zittman's Decoction.

DOUGLAS W. MONTGOMERY. *Journal of Cutaneous Diseases*, April, 1908.

The author asserts that Zittman's Decoction has unjustly been forgotten as a therapeutic agent in the treatment of syphilis. Although at first glance it would appear to contain very little of any drug known to be efficient in the treatment of this disease, it exerts a marked effect on certain cases. It should be made in the old way as follows:

℞ Sarsaparilla root 100.00 cc.
Water 2600.00 cc.

Add well mixed up and in a linen bag:

White sugar 6.00
Powdered Alum aa 6.00
Calomel 4.00
Cinnabar 1.00

Allow this to stand over night in a covered earthenware or porcelain vessel. The next morning simmer gently for 8 hours. Then add:

Fennel seed.
Anise seed 4.00
Senna leaves 24.00
Licorice root 12.00

The seed should first be brayed in a mortar and the leaves should be cut fine. Allow the mixture to stand for three hours and strain off 2500.00 grams.

Label Zittman's decoction (strong).

After straining off the strong decoction add to the dregs:

Sarsaparilla root.
Cassia bark.
Licorice root.
Short Cardamon seed aa 3.00

After standing three hours strain off 2500.00 grams.

Label Zittman's decoction (weak).

The dose is a wine glass full morning and evening, although larger doses up to a pint may be given.

The three principal ingredients of the decoction are senna, sarsaparilla, and mercury.

The senna acts as an eliminative and is supposed to accelerate the elimination of the mercury. The sarsaparilla acts as an alterant and assists the mercury particularly by increasing the elimination through the skin. The mercury is present in the form of the albuminate and is very easily assimilated.

The remaining ingredients act only as flavors or carminatives.

The decoction is not as powerful an antiluetic as mercury and iodide of potash but its usefulness has been repeatedly demonstrated in cases of malignant syphilis in which the mercury and iodide frequently fail. It seems to give the body an added power of elimination. The author also recommends its use between courses of inunction or after prolonged use of potassium iodide.

H. W. C.

PATHOLOGY AND BACTERIOLOGY

Edited by Richard M. Pearce, M. D., Charles K. Winne, Jr., M.D., and
H. P. Sawyer, M.D.

On the Occurrence and Physiological Nature of Glandular Hyperplasia of the Thyroid (dog and sheep), together with Remarks on Important Clinical (human) Problems.

DAVID MARINE. *Johns Hopkins Hospital Bull.*, 1907, xviii, 359.

Marine believing that the various problems associated with thyroid lesions could be best studied in animals has conducted an extensive investigation both anatomical and experimental, using mainly for this purpose the dog and sheep. In Cleveland where this work was carried on he finds that at least ninety per cent, of all street dogs show glandular changes on histological examination. Sheep are affected to about the same extent. His material which forms the basis of this study consisted of 325 dogs' thyroids and parathyroids, thirty-five sheep's thyroids, thirty-one bovine thyroids, and 173 human autopsy specimens.

ANATOMICAL DESCRIPTIONS.

(1) *The Normal Gland.* The gross and histological appearance of the normal gland is described. It is practically identical histologically to the human gland, except that in herbivora the stroma is more prominent.

(2) *The Glandular Hyperplasias.* Under this term the author includes all grades of changes in the thyroid characterized by the production of the columnar types of epithelium with intra-acinar papillomatous growth, by hypertrophy of the stroma by the increase in the blood supply and by a decrease in the stainable colloid. These changes the author observes are similar to those occurring in primary (toxic) exophthalmic goitre in man and identical with those described by Halsted following partial excision of normal dog's thyroid. All gradations from the normal gland to the most extreme types may be seen.

(3) *Simple Colloid Goitre.* Generally speaking the changes which the author notes in this condition may be designated as exaggerations of the normal structures of a normal gland. There was uniform and symmetrical enlargement of the lobes, thickening of the capsule and blood vessel walls. On section the acini are large, well defined and filled with dense uniform colloid and some blood pigment.

Microscopically the colloid stains uniformly and densely and sharply about the epithelium which latter is of a low type.

A table is presented with an analysis.

Table of analysis of 202 dogs' thyroids with regard to *size of gland, capsule vessels, stromas, stainable colloid alveoli, alveolar epithelium and cell nuclei* is presented. Briefly the analysis shows that of the 202 glands examined only 19 were normal, 15 showed colloid hypertrophy, 168 glandular hyperplasia (all degrees).

The physiological nature of the Glandular Hyperplasias. The author believes that from a careful study of his material, experimental and

anatomical, together with the available literature, that the most rational conclusion is that it is a *physiological reaction* on the part of the gland to a demand from the tissues, and that these glandular changes are to be considered cretinoid in nature. He cites the following evidence:

1. Clinically, dogs manifest all degrees of the symptom-group from true cretins to normal dogs.

2. It affects the young and they tend to recover spontaneously.

3. One can produce the same histological changes in puppies by partial removal of the glands from the mother before pregnancy.

4. The changes can be produced in normal dogs' thyroids by partial removal.

5. The hyper-activity of the gland is evidenced by the tremendous increase in the blood-supply and the distended lymphatics.

6. Anatomically all degrees of reaction were noted from the comparatively normal gland to the most marked glandular changes. Assuming that these glandular changes represent stages in a physiological reaction to a deficiency which seems to the author the most natural deduction from the observed phenomena, he attempts to answer the question as to what might this deficiency be, against which the gland is reacting. Iodine naturally first suggested itself. In support of the view that iodine plays an important role in the normal physiological activity of the gland he cites the following data:

1. The iodine content varies inversely with the degrees of glandular hyperplasia.

2. Iodine or iodine containing compounds will reduce this glandular activity in the dog in all cases.

3. Iodine will prevent the occurrence of glandular hyperplasia after partial removal of normal glands which would otherwise hypertrophy.

4. Iodine will prevent the occurrence of hyperplasia of the thyroids of puppies from bitches in which three-fourths of the gland has been removed.

5. Endemic hyperplasia of the thyroid does not occur along the seacoast. MacCallum found that about seven per cent. of the dogs' thyroids in Baltimore show glandular changes as compared with ninety per cent. in Cleveland.

Effect of feeding Iodine Containing Compounds on the Thyroid Gland and on the Organism as a whole.

Briefly stated the changes the author found were these:

1. Marked reduction in the size of the gland as a whole.

2. Reduction in blood-supply associated with obliterative endoarteritic changes similar to those occurring in endoarteritic vessels during involution.

3. The acinar epithelium reverts from a high columnar to a flat cubical (this may take place in two weeks).

4. There is a rapid accumulation of normally staining colloid.

5. There is a great increase in the iodine content of the gland over that of the control lobe and even over the normal content of a normal gland.

6. The lymphatics instead of being the huge, sacculated trunks filled with rather clear watery fluid become barely noticeable. The dog's general condition shows equally striking changes.

The ease with which all cases of glandular hyperplasia in the dog revert to a colloid type upon the administration of iodine containing compounds suggests to the author that colloid goitre is the quiescent stage. In other words, in its simplest form and conception, glandular hyperplasia is the hyperactive stage of the cells, and colloid goitre is the quiescent stage after the deficiency has been met. He adds that if this interpretation of the formation of colloid goitre be the correct or usual mode, then the term "colloid degeneration" as applied to colloid goitre is a misnomer.

Effect of iodine on the human thyroid. The author's only observation on this point, was that of 173 human autopsy specimens examined, all of the cases which had had iodine administered just prior to death showed the acinar epithelium to be in the quiescent (low cubical) stage.

From this study the author draws the following conclusions:

1. That iodine is essential for normal thyroid activity.
2. That granular hyperplasia is a physiological reaction to a deficiency, and is to be considered cretinoid in nature.
3. That colloid goitre is usually preceded by a stage of glandular hyperplasia, and in its uncomplicated form is the quiescent stage of the same.
4. That the associated enlargement of the spleen, thymus and lymph glands, in varying degrees, is an integral part of the affection.
5. That the commercial dessicated thyroid contains a mixture of normal and abnormal thyroids, and that this explains a part of its varied action clinically.
6. That further observations will show a closer relationship between the glandular hyperplasias in animals and toxic (exophthalmic) goitre in man than has been indicated.

GEORGE E. BEILBY.

Myeloma.

T. V. VEREBELY. *Beiträge z. klin. Chirurgie*, 1906, *xlvi*ii.

Verebely reports a case of a man fifty-two years old, who presented a tumor in the middle of the sternum, extending from the third to the fifth ribs, poorly outlined, nodular, painless, non-pulsating, the skin being movable over it, but the tumor not being movable upon the underlying structures. Patient was dyspnoeic, and a tracheotomy became necessary, death following after fifteen days of exhaustion and dyspnoea.

Autopsy, in addition to the tumor of the sternum, revealed a tumor in the larynx at the level of the cricoid, which so constricted the laryngeal lumen that a small probe could scarcely be forced through. Metastases were also found in the ninth and tenth vertebrae.

Blood findings were normal. The tumor and its metastases in the larynx and spine were diagnosed microscopically as myeloma.

Verebely discusses the subject of myeloma at length, both from a

pathological and clinical standpoint and he quotes extensively from the literature.

Myeloma is defined as follows: Progressive changes originating in the lymphatic tissue of the bone-marrow, but only when those changes cannot be regarded as simple incidental findings of a constitutional lymphatic tissue disease (e. g. pernicious anemia, leucæmia, infectious anemia, pseudo-leucæmia).

The clinical appearances of myeloma he sums up as follows:

I. Symptoms referable to the bony system.

- a. Bony deformities, especially bones of trunk (vertebrae and sternum) with stiffness and difficulty in moving.
- b. Spontaneous fractures, especially of ribs.
- c. Demonstrable bony tumor with softening of the bone, giving way to pressure, often with pulsation. The sternal tumor which is often the first symptom of the disease may in many cases be first discovered by the increased sternal dullness.
- d. Skiagraphs may show bony defects and bony rarefaction.

II. Symptoms referable to the surrounding soft tissues, such as demonstrable tumors.

III. Nervous symptoms. These he divides into groups.

1. Paralysis of basal origin, often transitory in character.
3. Various neuralgias; sciatica or intercostal neuralgia.
4. Absence or weakening of tendon reflexes.
5. Pains of varying character, for the most part extremely persistent.

IV. General symptoms.

1. Blood changes, usually a simple anemia.
2. Fever, partly following complications, partly as a primary symptom of bone marrow loss; in the latter case of an intermittent character.
3. Albumosuria. Bence-Jones reaction—(Coagulum with HNO_3 on standing clears up on heating).

The pathological conclusions reached by the author are noted as follows:

1. The primary (myelogenic) tumors of bone-marrow may originate from the connective tissue structure, from the endothelial cells, or from the lymphatic tissues.
2. Myeloma is a true form of tumor, and has equal rank with tumors of other forms of tissue (myoma, glioma, etc.).
3. Two divisions are given at present—myelogenous pseudo-leucæmia and lymphosarcoma of bone. These names are superfluous and incorrect.
4. Myeloma being considered as a single form of neoplasm, different forms of the neoplasm may be differentiated, which have their explanation in the polymorphous structure of the bone-marrow.
5. The clinical appearance of myeloma may take many forms, and have not as yet been sufficiently worked out.

GEORGE E. BEILBY.

LARYNGOLOGY, RHINOLOGY AND OTOTOLOGY

Edited by Clement F. Theisen, M. D.

*An Epidemic Pneumococcic Catarrhal Disease.*BECK AND STOKES. *Journal of the American Medical Association*, September 14, 1907.

A description of a curious catarrhal condition of an epidemic nature occurring in Dr. Beck's practice in Baltimore. It differed essentially from ordinary colds in that it was apparently not the result of exposure and it affected almost invariably more than one member in a family and sometimes entire families. The cases may be looked on clinically as measles without a rash, as conjunctivitis with general catarrhal symptoms, as whooping-cough without a whoop, or as grippe without mental or physical depression. The group of cases presented a definite clinical picture, and the authors considered that the epidemic is an affection having a distinct entity. The paper is based on the study of fifty-six cases, of which thirty-three were examined bacteriologically.

The histories of a few of the most typical family groups are given:

GROUP I. G.—Family, consisting of six members, father, mother and four children. The children were aged eighteen years, six years, five years, and ten months respectively. The author was called to see the baby who was thought to be suffering from whooping-cough. The child had had none of the acute infectious diseases. The one boy, aged five years, was the first one in the family affected with this catarrhal condition. The others, except the other boy, were affected three days later. The attacks were ushered in with chills, followed by slight fever and night sweats; this was associated with paroxysmal cough, discharge from the nose, watering of the eyes, slight soreness in the throat, slight pain in chest and abdomen, and absolute loss of appetite. There was marked constipation, and vomiting frequently occurred after paroxysms of coughing. The cough was of a severe character. The attacks occurred more frequently during the night. When the child was first seen the symptoms had subsided except the cough and the discharge from the nose, which was then muco-purulent. He had a slight bronchitis and vesicles of chicken-pox.

The one son, aged six years, who was similarly affected was also taken with chills and fever, which were followed by sweats. He had a peculiar dry paroxysmal cough, having three or four severe attacks at night, which lasted until he vomited. He had marked lachrymation, without congestion, nasal discharge, sore throat, thoracic and abdominal pains but no rash. The fever lasted about one week during which he had several night sweats.

The daughter, aged eighteen years, and the mother, had the same train of symptoms, namely: fever, sweat, cough, sneezing, rhinitis, mild conjunctivitis, pain in the chest, slight abdominal cramps, anorexia and vomiting after coughing. The symptoms lasted three weeks. The father had the same symptoms, but a more intense conjunctivitis.

The baby began with intestinal symptoms, nausea, vomiting and diar-

rhea. She had a muco-purulent conjunctivitis in both eyes, slight swelling of the eyelids and intense photophobia. The throat was uniformly red, but the tonsils were not enlarged. Cover-slip preparations and cultures from the nose and throat of the mother and baby showed pneumococci.

GROUP 2. S. Family.—Four members were affected, aunt, aged thirty-five years; mother, aged forty years, and two children, aged five and seven years. Mrs. M. and her sister living in a flat on the second floor of the same dwelling were also affected. The symptoms in this group of cases were about the same as in Group 1.

One of the most interesting cases of this collection was treated in the Baltimore Eye, Ear and Throat Hospital. The patient a boy aged eighteen months had had early symptoms of hoarseness, cough, fever and lassitude. Several brothers and sisters were affected in the same way, and some of them had a rash. The eye symptoms had existed a week before he was admitted to the hospital. There was cloudiness of the cornea of the right eye and a hazy appearance of the cornea of the left eye. The mucous membrane of the mouth and throat was reddened and there was a slight, dirty-looking membrane which appeared in patches in the pharynx. Cultures proved negative for diphtheria, but bacteriologic examination of the eyes showed almost pure pneumococci.

Etiology.—That this disease is of an infectious nature is evident from the report of the two family groups. Forty-six cases occurred in nineteen families. An interesting example of the epidemic character is an outbreak on board a bay steamer, in which twenty per cent. of the crew suffered the same symptoms, including the captain, chief engineer and watchman. A smear from the engineer's throat showed epithelial cells containing as many as sixty pairs of encapsulated diplococci. In all except ten of the author's cases there was a history of house infection.

Age.—The disease is met with more frequently in children. In twenty-two of the fifty-six cases it occurred under seven years of age, ten of these under one year, the youngest patients being twins eight weeks old. All of the author's cases occurred in the spring.

Symptomatology.—The period of incubation ranges from two to seven days. The invasion is usually marked by chilliness, slight febrile disturbances, and occasionally night sweats. Temperature usually from 99.5° F. to 102° F., continues from three to four days to one week. A spasmodic cough, croupy in character, usually worse at night and often associated with nausea and vomiting is a fairly constant feature. Profuse herpetic eruptions frequently occur. Loss of appetite and often complete anorexia are distressing symptoms in young children. A striking feature in the study of these cases is the absence of any marked nervous or mental symptoms. A decided leucocytosis was observed in all cases in which the blood was examined. A significant feature of this disease is the formation of a pseudo membrane. This occurred in twelve and five-tenths per cent. of all the cases. The membrane is of a light yellow color, usually situated in the nose, pharynx or naso-pharynx, and occasionally the conjunctiva. Cover-slip preparations show an enormous amount of encapsulated pneumococci, and direct inoculation with animals produces

pneumococci septicemia. Severe bronchitis was present in ten of the cases. Some of them which had been carefully studied, proved almost beyond a doubt to be due to a pneumococcus infection. Fibrinous pleurisy complicated two cases, and frontal sinusitis and purulent otitis media each complicated one case.

Bacteriologic study.—In most of the cases the diplococcus pneumoniae at times in combination with the pyogenic micrococci was found. The first cases of pneumococci conjunctivitis were reported by Parivaud and Morax in 1894, and the cases were also accompanied by lachrymation, coryza and purulent and fibrinous inflammation of the conjunctival mucous membrane. So far the writers have studied thirty-three cases, and found pus cells and pneumococci in seven specimens from the nose, nine from the throat and ten from the eye. The pneumococcus was found in cultures in eight cases from the nose, and in twenty-three cases from the throat, in four of which membranes were present. The original cultures from most of the cases were inoculated into white mice, and the pneumococci often proved virulent, killing the mice with general septicemia in from one to eleven days. In the second series of sixteen cases, eight rabbits were inoculated intravenously with pure cultures from the throats, and five died of general pneumococcic septicemia. In twenty-nine out of thirty-three cases the pneumococcus was obtained either from the nose, throat or eye by cover-slips, cultures, or animal experiments.

Conclusions.—This disease exists as a distinct entity, characterized by purulent or fibrinous inflammation of the mucous membranes of the eye, nose and throat. The infection can be communicated from diseased to healthy persons. The infection is caused by the pneumococcus, assembling in its cultural and pathogenic properties, the cause of lobar pneumonia.

ALBANY MEDICAL ANNALS

Original Communications

ON THE INHERENT SPIRIT OF MEDICINE

Read before the Medical Association of Troy and Vicinity, February 4, 1908.

By A. STUART M. CHISHOLM, M. D.,

Bennington. Vt.

There seems to exist in the minds of people in general, a misconception of the dignity and purpose of medicine. We have heard much of late years about mercenary medicine, and the charge is found on investigation to be hoary with antiquity. Yet it seems that physicians as a body have been little careful to correct this error, in some cases have silently acknowledged its truth, and indeed in a few instances have apparently adopted it as a rule of professional conduct, which has further emphasized its prevalence in the minds of the laity. I have recently come across an item in a medical journal, which is especially illustrative of the virulence of this charge. In a casual clipping, the journal I speak of reports the following scholarly invective, as uttered from a pulpit in a neighboring city:

"It is not a profession, it is a trade that the doctors ply to-day. It is not the practitioner of a profession who goes into a household and demands his fee of \$500 or \$1,000 before he will apply the knife to the cancer, the anaesthetic to the wound. Such practices ought to be condemned from every pulpit—every rostrum in the land. The government ought to step in and prevent them."

I am myself of the opinion that to apply the anaesthetic to the wound is not good surgery, and I am convinced that such coarse accusations as these the profession of medicine throws aside like dewdrops from the lion's mane, yet underneath this vulgar and slovenly violence lurks a manifest malice which wilfully misrepresents the inherent spirit of medicine, and which, with less

bitterness and better taste, prevails widely among men intelligent enough to comprehend their error when it is made apparent to them, and just enough to yield recognition to the truth when once that truth is vindicated.

I am conscious that there would be a certain presumption in my venturing to give form to thoughts that must often have come vaguely into the minds of many thinking men, were it not that while the utterance of these thoughts may be imperfect, yet it seems best that some form should be given to them, and that the beneficent purpose, the great achievements and the magnanimous spirit of our calling should be impressed upon the minds of those who have never carefully considered what the profession of medicine really is; and thus elevate their appreciation of the work we do and the ends we serve.

If the practice of medicine were, like other occupations, prosecuted for the sake of money, how many and how great opportunities for enrichment occur, may be conjectured by an estimate of the amount of money that Von Behring, for example, might have demanded for the use of the diphtheria antitoxin. The history of medicine is unfortunately not absolutely free from instances where the desire for gain has blinded physicians to any higher purpose. In the early part of the seventeenth century, the obstetric forceps, one of the most useful instruments in use, was invented by Peter Chamberlain, of London, but was kept as a family secret for many years for private gain. The use of this instrument was restricted to his sons and a few other persons, as Dr. Davis tells us, who were also pledged to secrecy. Nearly a century afterwards, in 1721, Palfyn invented a similar, but less perfect instrument, and exhibited it before the Paris *Academie des Sciences* as something perfectly new, so well had Chamberlain's secret been kept. Gerrard, in his "*Strafford's Letters*," says under the year 1634: "Dr. Chamberlayne, the man midwife, endeavored to erect a lecture of midwifery, which he would have read in his house to the licensed midwives of London, for which he was to have one shilling for every child born in the city and suburbs of London; other conditions he subjoined to this, as bargaining beforehand for his fees in cases of necessity,"—(I presume he meant "of destitution,") "but it would receive no passage from the Bishop of London, who licenses all the midwives of London, nor yet from the College of Physicians."

It is an evidence of the prevalent spirit of the profession that this case stands out as such a rarity in medical annals. The absence of cupidity among physicians is the more remarkable since the assumption of their duties is in no way restricted to selected aspirants. Young men, with no regard to fitness, embark upon its study from diverse and often from unworthy, or at least uncertain, motives, yet the inherent spirit of medicine at length influences their lives and elevates their aims in life.

Those misguided individuals have a very distorted conception of the spirit of medicine who have clamored for Legislative enactments which would give to physicians the right to terminate by anticipation the lives of patients afflicted with incurable diseases; for the time can never arrive, so long as medicine continues to be a profession, when to the other duties of the physician will be added that of serving, under any conceivable circumstances, as public executioner.

So little is the beneficent purpose of medicine understood, that the profession encounters some of its most determined opposition among the very persons whom it endeavors to protect from disease. To an unprejudiced observer nothing can be more certain than that vaccination secures immunity from small pox, yet, with an effrontery perhaps unparalleled in the history of illogical vagaries, there is in existence an active association whose purpose is to prevent vaccination. If these people were not destitute of ordinary intelligence they would shrink appalled from the consequences that would follow the success of their nefarious propaganda. More recently, another society has been revived, that of the antivivisectionists, which, encouraged by the notoriety that the opponents of vaccination have achieved, has presumed to obstruct the progress of preventive medicine by an appeal to hysterical sentimentalism. The one seeks to obliterate the record of the past, the other strives to close the door to the future; both are interesting studies in mental obliquity.

The study of medicine is an entrancing subject; its practice requires an array of virtues whose mere contemplation staggers the mind. One must meet violence with gentleness, ingratitude with equanimity, insult with fortitude, slander with silence. The physician's life is a daily exemplification of the Golden Rule. One must suffer and be strong. The very sensitiveness that inspires sympathy with pain and misery is a weapon in the

hands of ignorance and malice wherewith they deal dreadful wounds, wounds which must be endured silently. Resentment can have no place in the physician's mind. Equanimity must be maintained in the face of misapprehension and abuse.

Those physicians who practice medicine for their fees only have missed the spirit of their profession. They are hucksters and tradesmen. Among them are those who advertise their cures, who magnify their skill, who vaunt their knowledge, who promise things beyond their ken, who affect an overpowering dignity of deportment, and who exact the uttermost farthing. These are they who gain repute by disparaging their colleagues, who increase their clientele by indulging in a covert sneer at their fellow practitioners, by discrediting their diagnoses and by criticizing their treatment. There are many insidious methods of assailing and even of destroying the reputation of others. Of these unworthy members of the profession I have no wish to speak save by a passing word. Men with paltry aims, selfish lives and ignoble minds may be found among all classes and in all callings. To those who feel and appreciate the sacred duties and the lofty responsibilities of the profession, these sordid souls are a source of wonder as well as of pity.

Moreover there seems a degrading impropriety in recognizing any possible emulation between medicine and its unworthy parasites and imitators. In several of the states there has been an annual struggle in the Legislature to obtain for osteopathy kindred recognition to that which the laws secure to the practice of medicine. Christian Science perverts abound, of which specious travesty of religion and medicine, one may say almost in the words of Voltaire's comment on the title of the "Holy Roman Empire" that it is neither Christian in its spirit, nor scientific in its method. The discredited theories of the inglorious Hahnemann still find a name if not a place in current speech, for there yet linger here and there a few persons who glory shamelessly in the undesirable title—Homeopath. To grosser quacks, to lower depths of pretence and fraud, to cancer-cures, to hypnotists, to abortion mongers, to venereal quacks, I shall not so much as allude. Even their names are an offense.

Rather would I speak of those unselfish men who look upon deformity with gentle eyes and reach out to misery a helping hand; whom dirt and disease and danger cannot divert from the path of duty; to whose sympathy the cure of disease appeals as

strongly as the pleasures of sense appeal to other men; physicians, who, in their sacred mission, alleviate pain, comfort the distressed, encourage the hopeless and uplift the degraded victims of sensuality and crime. All the world honors those noble men whose undaunted fortitude demonstrated the non-infectious character of yellow fever, yet they only presented on a larger stage the great principles that govern and actuate the daily conduct of the average physician. Heroism is not noted as it goes modestly on its daily rounds and performs its simple duties.

There seems to the unreflecting mind something repulsive and almost ignoble in ministering patiently to sufferers from loathsome diseases. There is a legend of St. Francis, one of the greatest of recorded men, upon which his biographers dwell with admiration, wherein he is represented as for a time devoting himself to the care of lepers, living with them, washing their sores and gently ministering to their needs. Well, are not tuberculosis and diphtheria and yellow fever and syphilis as fatal as leprosy? Yet a service that crowns Francis with a halo of sanctity and sets him apart as especially holy, fails to excite a word of admiration when it is performed daily for many years by those among us who devote their lives to such service. There is no vain-glory in signalizing the devoted and modest heroism that characterizes the daily lives of physicians. Perhaps it is the greatest glory of our profession, that such devotion is looked upon by the laity as usual and customary, as such an essential part of our duties, so naturally expected from us and so constantly performed, that it no longer excites comment, as miracles when of daily occurrence cease to be miraculous and become common.

An illustrious example of equanimity maintained in the face of misapprehension may be found, where so many admirable illustrations of virtue are found, in Plutarch. It happened that while Alexander the Great was in Cilicia, a short time before the great battle of Issus, he became suddenly very ill after bathing in the icy waters of the Cydnus. None of his physicians dared to treat him until Philip, a physician from Acarnania, who also attended him, ventured to take the responsibility of caring for him. The extent of this responsibility may be recognized from the fact that when Hephestion died of fever at Ecbatana, the physician who attended him was crucified because his patient died. At the time when Philip assumed the charge of his illus-

trious patient, Parmenio wrote to Alexander to beware of Philip, for he had been bribed by Darius to kill him and the reward that he was to receive was stated. Alexander, after reading the letter, put it under his pillow, and, Philip coming in with a draught that he had prepared, he took the cup in one hand and with the other gave Philip the letter to read, so that while Philip was reading the accusation of Parmenio, Alexander was drinking the medicine that Philip had brought him. One knows not whether to admire most the magnanimity of Alexander, or the courage and equanimity of Philip, but both were suitably rewarded, for the illustrious patient, fortunately for Philip, recovered. One hesitates to conjecture what would have befallen Philip if Alexander had died.

It was not an unusual thing for the physician to face death when his patient died, for there was even a law in Egypt by which the physician after the third day was obliged to assume the risk of his patient's death; in which event the state avenged the patient's misfortune on the head of the physician.

These risks, fortunately for us, no longer hang over the doctor's head, but from others, no less real, we cannot escape. Everyone knows the danger that surrounds the willing ministrations of physicians. In the community where I live, two young physicians have, within the last five years, caught tuberculosis from their patients. Their pathetic fate, scarcely even among their friends, scarcely even among their patients, excited a casual word of sympathy; and yet less deserving men have had altars erected to them. Among my intimate professional friends, I know of three who contracted syphilis from their patients, and all three have died. I am sure that men have been canonized for less merit.

In the hagiography of the Catholic Church we read of a holy bishop, who was after his death enrolled among the saints, whose only recorded miracle is the following: "And on a time there came a woman over the bridge with her lap full of eggs, and a reckless fellow struggled and wrestled with her and brake all her eggs. And it happened that the holy bishop came that way the same time and bade the woman let him see her eggs, and anon he lift up his hand and blessed the eggs and they were made whole and sound, ever each one, by the merits of this holy bishop, and being then glad she thanked God and this holy man for the miracle that was done to her." Which, think you, was

greater, this holy bishop of Winchester, or my three friends who met death as a reward for their devotion to patients afflicted with a loathsome disease?

The physicians who have met death from diphtheria, from small pox, from tuberculosis, in the heroic discharge of duties so common as to seem trivial, cannot be computed. Time has failed to keep a record of the noble dead. A roster of their honored names is out of our power. Obscure heroes, who have fallen in the strife for humanity, fill our churchyards, where they sleep in unacknowledged graves. St. Paul boasted that he was a citizen of no mean city. We may boast in the same spirit, that we belong to no mean profession, to no ignoble calling; and, while ungrateful beneficiaries may accuse us of practicing medicine for money, we may be sure that alike in city and in country, alike among the homes of wealth and the hovels of destitution, there exists a great body of men who by unselfishness, by fortitude, by kindness and charity, sustain amply the traditions and fulfill worthily the scope of our noble calling. To those men what is a money fee? It is not time and study and care alone that they offer to the afflicted. It is their own strength, their sleep, their very lives that they lavish upon them, and what is a fee in exchange? Do men sell their blood for gold?

I am making no exhaustive compilation of the benefits that physicians have conferred on humanity. The record is open for all to read. One has not to grope and delve for them. It was estimated that Spencer Wells, in one series of Ovariectomies, had added 20,000 years of life to the patients on whom he operated. Is that not raising the dead to life? For even those who were raised from death by Christ and His disciples were not thereby rendered immortal. To raise one from the dead was merely to add a few years to his life. Speaking with due humility, we may say that there is no member of our profession who has not done as much, and many have done far more. Before the discovery of vaccination 3,500,000 people died of smallpox in a year in Mexico. In British India in the year 1770, 3,000,000 died of the same disease, while in Europe the death rate from this one disease alone averaged 200,000 a year for 1,000 years. To-day it is almost a rarity. Since the introduction of compulsory vaccination into Germany, smallpox has practically disappeared from that country, while in the United States it is

not probable that one physician in one hundred has ever seen a case.

Who can compute the benefit of a century of vaccination? Reckon, if you can, the saving of human life from the time when hygiene and sanitation expelled forever the Black Death from Christendom,—but first read Boccaccio's account of the plague at Florence and Daniel Defoe's narrative of the Great Plague of London, and you will not need statistics to appal you. By how much has Von Behring shorn diphtheria of its fatal horror, and who can estimate the conservation of life due to diphtheria antitoxin? We are all witnesses to the general apathy shown among the laity towards the extermination of tuberculosis, and I have seen more than one article in the daily press roundly ridiculing Koch for his expressed doubt as to the transmissibility of bovine tuberculosis to man, as if by that doubt he had also thrown discredit on his previous labors, and imputing to him other than humanitarian motives. It is a curious fact that almost all human incentives to action are due to mixed motives, and the more complex our lives become, the less frequently do simple motives as springs to action determine our conduct, so that any decision is in reality a resultant of forces. It may be that often the benefit of humanity is at times less consciously active than the desire for reputation, or social and professional standing, or popular favor, or some other even less elevated aim, but nevertheless even if we are personally unconscious of this as a constant determining factor in our lives, we cannot wholly withdraw ourselves from the influence and spirit of our calling.

It is but a few years since tuberculosis was regarded as inevitably fatal. The belief in this fatality was rather the cause of Keats' death than the article in the *Quarterly* to which Byron ascribed it. Keats had a slight hemorrhage. He called for a candle and examined the sputum. Then he sank back upon the pillow exclaiming, "That is my death-warrant. I must die." He gave up hope at once. In Keats' day the death rate from tuberculosis was very high; for every 10,000 of population there were forty deaths annually from this disease, whereas to-day there are only eleven. It would, of course, be too much to say that this vast improvement is due entirely to a better knowledge of the disease, or to improved methods of treatment, since before the year 1882, when Koch discovered the bacillus of tuberculosis,

the death rate had already begun to abate. Much is probably due to a modification of the disease itself. Whatever the cause, however, there is reason to believe that its rapid diminution, both in prevalence and in fatality, means its speedy elimination from mortuary statistics. It is apparently destined, at least in Dr. Bulstrode's opinion, to become, in another generation, if not entirely extinct, at least as infrequent as typhus fever or leprosy.

Moreover, that is the end to which all the recent advances in medicine are purposely tending,—to the eradication of contagious disease. Prophylaxis has become the motto of medicine. The physician is consciously laboring for his own elimination as an economic factor. He is cutting away his own props, he is giving away with open hands his own fields and forests to benefit humanity. This is the inherent spirit of medicine.

Thackeray has a sketch, in one of his Roundabout Papers, that each of us may easily parallel from his personal observation.

"About two years since, there was, in our or some other city, a famous doctor, into whose consulting room crowds came daily, so that they might be healed. Now this doctor had a suspicion that there was something vitally wrong with himself, and he went to consult another famous physician at Dublin, or, it may be, at Edinburg. And he of Edinburg punched his comrade's sides, and listened at his heart and lungs, and felt his pulse, I suppose, and looked at his tongue. And when he had done, Doctor London said to Doctor Edinburg, 'Doctor, how long have I to live?' And Doctor Edinburg said to Doctor London, 'Doctor, you may last a year.'

"Then Doctor London came home, knowing that what Doctor Edinburg had said was true. And he made up his accounts, with man and Heaven, I trust. And he visited his patients as usual. And he went about healing and cheering and soothing and doctoring; and thousands of sick people were benefited by him. And he said not a word to his family at home, but lived among them cheerful, and tender, and calm, and loving, though he knew the night was at hand when he should see them and work for them no more.

"And it was winter time, and they came and told him that some man at a distance was very sick and wanted him; and though Doctor London knew that he was himself at death's door, he went to the sick man. And he died, and his family

never knew until he was gone, that he had been long aware of the inevitable doom."

There seemed to Thackeray something peculiarly noble in this pathetic incident, but there has never been a time, at least since the days of Boerhaave, when physicians of this type have not abounded in the world.

A physician's duties often surpass his professional boundaries. As Sir Thomas Browne finely said, his circle is more than 360 degrees. Disease is not the only thing he has to cure. The sorrowful confessions that he receives, the domestic tragedies that he prevents, the broken hearts that he soothes, the ruined lives that he restores to rectitude, who can enumerate? How memories throng upon the mind when we dwell a moment upon these things! There is something peculiarly tender and holy in these services, and a physician must be not only a good man but a wise one, to direct his patient's feet out of the path of calamity and sin, and into the path of life in its fullest meaning. It has been well said that a physician's hands should be as clean as those of the priest who officiates at the altar.

These are a few of the innumerable glories of the profession of medicine. The achievements that I have mentioned are those of four or five physicians. I cannot speak in detail of Morton, and the discovery of general anesthesia; of Lister, under whose teaching septic surgery was forever abolished; of Pasteur, who instituted the science of bacteriology. These are a part of the heritage which to some extent we all share, that has descended to us and will be transmitted to our successors. This is our birthright. When we contemplate these things, who would not be proud to be associated with the men I have named, to be a colleague of Sydenham and Haller and Boerhaave and Virchow and Pasteur? It is not given to us all to equal their achievements or to rival their renown, but we can at least keep our own lives pure, our own ideals intact, our own honor blameless, that through us the profession of medicine, like the ancient Roman republic, *ne quid detrimenti capiat*, may sustain no harm.

CHRONIC ALCOHOLISM

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In selecting the subject which I have it is not with any desire to attempt anything technical or probably to introduce into the subject matter anything new, but rather to review, in general, a matter upon which we all have some quite well-grounded impressions. The very broad subject of chronic alcoholism I have been bold enough to bring up for review to-day. This subject is like the hackneyed one of typhoid fever, and is the next most frequently written about. This disease, which has been called such since the days of Benjamin Rush, a century ago, has quite a well-defined pathology and as well-defined symptomatology, but the treatment thereof is as changeable as can be. We are prone to eagerly take up any new line of treatment in the honest hope that at least the root of the matter may be reached thereby. Long since the Keeley Cure statistics have come to the fore, showing an increasing army of temporary reformers only, so much so that this mode of treating alcoholics is now looked upon as but a first-class temporary expedient.

There is no form of poisoning so widespread and so rapidly increasing at the present time as the series of toxic phenomena exhibited in the persons of those addicted to the excessive use of various preparations of alcohol.

There is no other kind of poisoning, which so degrades brain structure and mental poise, undermines and renders chronic physical faults, or which is so far-reaching even ethically, sociologically and genealogically. It would be to no purpose to-day to enumerate the figures pertaining to this drug as embodied in asylum, prison or reformatory reports, nor, on the other hand, to dwell upon the already well-known fact that intoxication of this sort is greatly responsible for other excesses of which syphilis is not the least infrequent afterbirth.

Excesses in alcohol are daily credited in police courts and before higher judicial tribunals because of offenses against morality, the law and order; excesses in coffee or tobacco never, nor is it more than a rare thing to have a case of morphinism thus appear for judgment.

The many who formerly held that drunkenness was a purely voluntary condition, that men and women could take it up and drop it at will and that it was a pastime with possibly a vice or crime in its wake, saw no need for medical consideration of the subject. It then seemed that the whipping post or some similar punishment was applicable to all alike or in worse cases more or less permanent confinement in jail. Modern scientific investigations, however, have revealed the fact that a large percentage of confirmed drinkers are what they are, namely, diseased, though they have a loathing against intoxicants and in spite of many and repeated struggles to quit the bad habit. Many of them have had the finest of moral support in their efforts, such as all that surrounds the pledge taking, the power of the priest in his abjurations and warnings and the erstwhile Keeley Cure, the latter of which goes a little farther inasmuch as it puts the physical condition in better line thus to back up the moral forces. Notwithstanding all, however, the recovery rate is small and therefore it must be a disease.

The pathology of this disease is a story in itself. The paralysis of will power, or inhibition, is the crux of the situation. The rest follows in time. It begins as a central disease of the nervous system in respect to its higher elements and descends from this domain to finally involve the mere vegetative functions of the body. From the blunting of moral force result affection of perception and intelligence. The anesthetic effect of the drug takes away the keen edge of thought. The drinker while thus does not feel that anything is amiss and when free from such a state is no more than resolved to stop the practice than he is again entangled thereby. The post-alcoholic waves of emotion embodied in the word "remorse" are a part and parcel of the alcoholic state, and have about the same relative value as the post-epileptic states of epilepsy. His brain is still alcoholically disordered, though he is apparently sober and how often in this state he again returns to the more comfortable one of former intoxication many cases attest. The element of time is a factor in many cases and thus honest endeavors to reform may appear more or less permanent. By no means all alcoholics are doomed. They may and are able to stop such practices for good, with apparently no harm, having been brought to themselves. But the question of why or how the people first become alcoholic and how a certain percentage of them entirely cut the drug out of

their life is not for discussion to-day. That alcohol begets alcoholics is a fact, however, and for the best and anatomical reasons. The frequent imbibing soon begins to act as a continuous chain of systemic poisoning, which first inflames and irritates, then impairs the functional or organic processes and finally destroys. It alters somewhat the chemical composition of the blood, affects the oxygen bearing ability thereof, lowers bodily temperature, increases arterial tension and shows its effect upon nutrition, principally in increasing fat where fat belongs and later putting it in places where it does not belong, as about the heart surface, later in its muscular fibers, arterial coats, and secretory organs. Fat is one of the lowest, if not the lowest element of tissue, and especially if it is stored where it cannot be used it degenerates into useless and irritating material. While fatty changes are going on at the same time fibrous tissue is increasing, due to the direct effect of alcohol upon the blood and its vasomotor constituents. Thus a double degeneracy takes place, one representing undeveloped energy, the other prohibiting, to a more or less extent, such energy from being utilized because of the poor absorptive power of the already thickened and fibrous capillaries. Thus we have arterio-sclerosis and the array of pathologic phenomena that subsequently show up in the essential organs of the body. Besides the above influences upon the blood and nutrition is the interference on the part of alcohol with the elimination of the natural poisons produced in the body, and, consequently, the waste products linger to further render the blood less potent, to construct new and healthy tissue. Furthermore, alcohol is a great absorber of water, and thus the watery elements of the blood which are so important because of the salts contained therein are modified and such a condition is particularly harmful to the higher structures of the body, namely, the delicate fibers themselves of the nervous system.

As alcohol is usually taken by man in his early active period of life, his damaged or at least reduced physical state is not infrequently apparent in his offspring, modified, of course, by the strength of stock which may be embodied in the mother of such offspring. Statistics are not necessary to give showing the place alcohol has in the starting of degeneracy. First we have the neurasthenics, then the alcoholics, then follow the epileptics, imbeciles, etc. This transmission is due to physical degradation and as such is the next most clearly traceable to syphilis, which

has the most clear-cut and conspicuous examples. You rarely see morphinism or cocainism transmitted. They have no pathology in the strict sense of the word, or at least none so tangible as alcoholism.

The great susceptibility on the part of the brain and general nervous system to spirits seems to be the final explanation of the situation. In a man with inherited craving, alcohol is the most convenient, the most sociable and first and last the most satisfactory drug to turn to. In such a one it is only a matter of time to destroy his inhibitory force and then begins the vicious cycle. The drunkard's humor which is so characteristic speaks for psychology and pathology at the same time.

The first stage of alcoholic influence is shown in quickened circulation and loosened emotional tonus. The higher powers of mental forces are shown in elation, talkativeness and delight. Repeated, it continues to reduce self-control and thus starts a reduction of personal moral force. The vaso-motor forces cannot help but act and receive a share in the above condition, and, hence arise functional irregularities throughout the body as time and frequency meet. Further punishment will come in the form of organic changes here and there. For some particular reason this drug has a special effect upon the vaso-motor control of the brain, producing a congestion, at first active and we then have the release of thought and feeling; secondly follows the vaso-motor paralysis or passive congestion which shows in mental dullness and depression. Frequent congestions naturally in time produce an alteration in the membranes of the brain, particularly, and such changes are more or less permanent. Hence, the nutrition to that locality and the brain underneath cannot but be modified. It is only a step for cell changes and later for degeneration to follow with corresponding declension of mental power. It is then that the drug has its anesthetic effect upon the man so that he cannot see the damage, or if he does it is only in a helpless way. The tissue depraving influence of the poison plus the irritation of retained body poisons from diminished secretions produce a craving too great for him to withstand. It is the craving of the tissues which cry out for the benumbing effect which alcohol, only alcohol, can satisfy in order that these tissues may get rest. The whole system is in an agony of distress, yet the intellectual man may actually loathe the taste of liquor. An inebriate thus characterized

must surely be sick and suffering from a true disease. So much for the pathology of alcoholism without speaking of its pathological anatomy.

The evolution of the symptoms embraced under the term alcoholism may be because of the effect of the small but regular daily soaking with spirits, or because of the frequent and at first far-between drinking bouts, these finally continuing until they catch up with one another. It has naturally been conceded that a man who has paroxysms of intoxication for a day or two a month, and preserving his constitution entirely free during these intervals does less injury to body and brain than the steady and so-called moderate drinker, who, with his daily doses, keeps his system mildly saturated.

The aspect of a toper is well marked and distinctive, and possibly flattering, but as time goes on the picture changes to one of doubtful presentation. The beer drinker's obesity seems to have with it a bloated appearance. The eyes are heavy and dull, the face red and the capillaries a little more conspicuous than natural about the cheeks and nose. He is now not quite as quick and active. The elasticity is not with him as much as formerly and sluggishness is in its place.

Spirit drinkers, on the other hand, are usually not as rotund for the reason that fibrous degeneration more easily partakes and makes demands upon the fat in storage. Muscular exhaustion is more apt to early show and stress with these people is poorly met and dealt with. Disturbed sleep is a factor on all occasions and is an early symptom. It is unrefreshing and full of dreams and the resort to the spirituous night-cap is the only solace, such as it is. The mental processes are usually a little slow in the morning and the subject cannot get himself in business trim until he has had his accustomed stimulant. Irritability and forgetfulness demand it and his thoughts are but of one thing.

Sensory disturbances later come forth to bother the alcoholic. Unsteadiness of muscular effort in performing action is a feature. Tremors of hands and face are quite characteristic, as well as of the tongue. Sometimes the voice has a tremulous tone, is poorly controlled and rather high-pitched. Frequently auditory and visual perverted sensations arise to annoy him. At first these may be slight and mixed with his restless and unsteady sleep. In a certain percentage of cases, as time and self-inflicted punishment go on, their judgment becomes warped to the extent that

they show by word and deed that they are delusional. In such states they often become concerned and try to curtail their habits so that they are less pathological in their effect. However, in quite a percentage of cases the delusional state with them after a time makes them unable to do business and renders them a menace to the immediate family. Their false ideas are generally those of a persecutory nature. They believe that someone is after them to get their money or property. Owing to the chronic gastritis, which almost invariably accompanies, the food does not taste right to them and they think the wife is neglecting this line of her domestic trust, and often there result outbreaks of abuse against the better-half and possibly against the children as well. Their judgment often carries them further in this food matter, and feeling that the food has been poisoned or drugged by some member of the family homicidal attempts occasionally arise with general excitement sufficient to cause removal to jail.

Another not uncommon characteristic point in an advanced drinker are the delusions pertaining to the wife's infidelity. He believes that his wife is allowing the attentions of other men. Insignificant occurrences are regarded as evidence against her. The squeaking of a door at night has proven to him that the person is being admitted clandestinely, and he gets up and goes throughout the house for the purpose of finding him. The well-meaning salutation of the postman is misconstrued. The courteous assistance of the next door neighbor or the unusual number of letters addressed to her or the very fact that she goes out of the house and down the street is sufficient to make him distrust her and think that she is neglecting the children as well. If the saloon-keeper refuses him drink he is sure that the wife has had a hand in the business. There is a reason for the idea which these people have regarding the wife's infidelity, and it is based upon their own failing sexual weakness. Their feeble judgment, irritability and depression cause them to thus reason as above stated.

Now with all the above conditions if the wife is irritable, cross and discouraged, as well as worn out, in respect to his actions and promises to do better the trouble is made worse and the home, even when he is sober, is not as cheerful, nor is it made as pleasant as it once was, and he is thus easily influenced to return to the drug which drives away care. In some such way arise the estrangements between man and wife and result in their

separation, the public not always being acquainted with the inside history of the affair misjudge them in part, some saying the truth and a part supporting him in the belief that the wife drove him to drink; for these patients usually state their case coherently and with so much true feeling that many are convinced. Thus arises the great problem concerning which students of the social problem have puzzled over and written so much about in an advisory way.

Delirium tremens is, as a rule, only an incident in chronic alcoholism. A spree in a temperate person even if prolonged is rarely followed by delirium. It is shown mostly in the chronic cases who have drank to excess for a time or who have suddenly cut off all intoxicants. Sudden stress, mental or physical, such as fright, injury, exhaustion or illnesses like pneumonia or severe gastritis bring out the trouble. Lack of nutrition from prolonged drinking and in the meantime taking but little food or being unable to assimilate it in proper quantity, are quite the main factors. There are many unlimited drinkers, however, who never have this nervous storm, and in those in whom it does appear it is thought that there must be some especially neurotic element as a basis.

The delirious symptoms are usually first shown in the form of restlessness, vague anxiousness and depression, with insomnia and disinclination for food. Occasionally, however, the subject may have gone to bed feeling fairly well and slept well until in the early morning hours he awakes trembling and fearful, a prey to active illusions about his person and bed clothing. As the trouble advances his emotional and hallucinated states become more active and show themselves by incoherence, great motor restlessness, loud talking, desire to go and attend to some imaginary business. Sights of animals and other terrifying objects put him into a great state of tremulousness. He feels all sorts of disgusting animals crawling over his body, he hears and sees people in his room and is sure they are there to do him harm. He hears troops marching by on the street and thinks that he is next to be taken out to be shot. Sometimes his delusions are of a fantastic character, and he talks to himself in a pleasant muttering way, and holds semi-coherent conversations. However, as a rule, the impressions are of a vivid and terrifying nature, and hence the frequent outbreaks of violence, noisiness and frantic efforts to escape imaginary pursuers or impending dangers. He entirely

mistakes identity and frequently makes vicious assaults upon his caretaker. He rarely suicides.

Besides the sensory disturbances, there are usually much muscular weakness, ataxia, pronounced tremors and thickened speech. The pulse is soft and rapid. The body temperature somewhat raised, the tongue heavily coated and the secretions checked. At the height of excitement the body is usually bathed in profuse perspiration and the urine generally contains albumen.

The course of the disease usually terminates in two or three days to a week. The sensory disturbances slowly fade as soon as sleep improves, and if they do reappear they are not so intense in their effect and the patient looks upon them as a mere passing show. At the same time there is a rapid disappearance of the physical disturbances as well. A few cases relapse after a few days, while others pass on into a condition of rather prolonged delusional insanity, with frequent termination in a state of mild dementia.

Aside from the intercurrent condition of delirium tremens, there occasionally arise cases of epilepsy. Such conditions do not, as a rule, last for long. However, many cases of epilepsy in early middle life are due to alcoholism.

The digestive apparatus of toppers is always chronically upset. Constipation, furred tongue, heavy breath, nausea early in morning and capricious appetite are present to some extent. In beer drinkers, dilatation of the stomach is common, and in such severe attacks of diarrhea arise. Later on, when tissue changes have occurred in the liver more marked are the gastric symptoms, such as vomiting and slight hemorrhages from bowels and stomach, and even before this there are frequent, so-called, bilious attacks, with slight jaundice and general weakness, lasting for a few days at a time.

The further clinical symptoms of these cases have to do with general failure of nutrition and a host of complications or terminal conditions which space will not permit discussion thereof.

The treatment of chronic alcoholism always begins with a rational idea of diminishing the quantity of alcohol as rapidly and safely as possible. In some cases, the absolute withholding of alcohol works no harm. In other cases, the method of tapering off has to be tried. It is always judicious to give something to take the place of the liquor. Sometimes large amounts of coffee or cocoa or large quantities of hot water made strong with ginger

are helpful. Sometimes alkalines in the form of effervescent mixtures, are serviceable and greatly help to diminish the gastric irritability and nausea. As generous a diet as possible should be given these people. They generally require a large quantity of albumenoid. If, however, the chronic gastritis is such as to need attention for a time nothing is quite as serviceable as milk with egg or unseasoned but nutritious broths. The juices of fruit are particularly serviceable in quenching thirst and allaying the craving feeling. At the outset in any cases small quantities of food frequently taken is a better plan than so-called light meals three times a day.

There are many so-called drugs which have been faithfully tried in such cases, such as gentian, iron, chloride of gold, the phosphates, muriate of ammonia, atropine, antimony and others. However, at the head of the list stands *nux vomica* or some form of strychnine. This remedy is generally combined with capsicum and ginger, together with a bitter tonic like gentian and if the patients show weakened circulation aromatic spirit of ammonia. Chloral hydrate can be introduced into this combination with good effect in those who are bothered with insomnia. This prescription has acquired the name of "D. T. Mixture" so commonly used in dispensaries in New York City, with the best result. Valerianate of zinc is often a good remedy, particularly when combined with sulphate of iron. *Nux vomica*, with ipecac, or apomorphine, is probably the basis of many of the secret cures for inebriety. The latter two drugs producing nausea and revulsion of the taste senses and hence modifying the craving in chronic cases, while the strychnine acts as a direct muscular tonic and support.

It is always well to remember that in men who have drank for years the heart needs support during the trying time of reform, and such remedies as *digitalis* or *strophanthus* are very serviceable. Weeks and even months are usually required for the elimination of the poison and the correction of the mischief done to organ and tissue.

Hypnotism has had but little place in the treatment of this disease, but thousands of drunkards have reformed under the suggestive effect of moral and religious forces, such as are embodied in temperance waves, revival meetings and the like. While such outside forces have had wonderful and oftentimes quite enduring results, yet the sum total of those who have re-

maintained steadfast is eventually small. And it has generally been more successful among those who have not had a distinct hereditary history. As an adjunct in the treatment of these cases, hydrotherapy is very serviceable. It has a very soothing influence upon the nervous system and aids in eliminating the unduly retained waste products. The hot air bath or modified Turkish bath, as well as the wet pack, are grateful to such patients. The shower bath, somewhat tepid, with brisk rubbing does equally as well in many cases.

The methodical occupying of the mind and getting these people fixed in some sort of mental exercise is of the greatest importance. The intellectual processes require that something substantial take the place of alcohol as much as the bodily conditions do. In other words, it is important that the highest part of the patient's nature should receive and be as wholesomely fed as much as the mere vegetative functions. The influence of culture, the support of friends is quite as important as a good meal and a warm fireside.

Cases of delirium tremens, as a rule, are cared for by the usual methods of seclusion and protection on the part of some cool and composed attendant. At the height of excitement hypodermic injections of hyoscine are serviceable. Occasionally minute doses of apomorphine, one-twentieth of a grain, work well in quieting the emotional state and reducing muscular activity. Trional or sulfonal are good remedies in producing sleep if you can get the patient to take the medicine by mouth. They are less depressing afterwards than either chloral or bromides; also a hot drink, which contains ginger or capsicum, together with some preparation of ammonia, is frequently a sedative and a supporter as well.

In these cases the excitement is often an evidence of extreme exhaustion and a diffusible stimulant like ammonia works quite satisfactorily. Bearing in mind that these cases are usually what they are because of mild starvation, light and nutritious food is after all the greatest corrective. Therefore, as soon as these patients have become quieted by sedatives and you are able to get them to take plenty of milk in small quantities at frequent intervals or can get them to accept hot nutritious broths in sufficient quantities a long step has been taken towards the beginning of convalescence. In extreme cases digitalis is necessary and even alcohol itself. The latter should be given hypodermically. Warmth and cleanliness are also of the highest importance.

Such cases, as a rule, are cared for at home under the direction of the family and a friendly attendant. Many, however, especially in the city, are placed in a lock-up and left to pass through their mental storm unaided.

Well-grounded cases of alcoholism require institutional care, or at least to be surrounded by certain barriers, which they know they cannot over-ride or break through. Change of environment and new associates, who are sympathetic only as to their real needs, and who make it impossible for them to procure drink are often acceptable to such habitues and upon them they rely for a supporting hand. Being so situated, their thoughts after a time turn to other things, their cravings subside and they are often healthfully occupied in some serious business. The mere fact that they are protected against themselves is a great moral brace and a prolonged stay very often quite satisfactorily puts them in a position to control themselves quite well and often completely in after life. It is estimated that, at best, not more than twenty-five per cent. of alcoholics are permanently cured.

There seems to be but little doubt that predisposition to alcoholism shows in generations just as much as other evidences of degeneracy. The very word degeneracy means lowering in some ways the stock, in respect to resisting diseases or even vices. Unfortunately, however, many persistent cases know the cogency of this point and put themselves behind the statement that their disease is hereditary or that his father drank and that, therefore, he cannot be cured for he has acquired the same trouble. A statement some like the above quite allows you to infer that you will not get much co-operation in your moral, hygienic and social endeavors to reform such a person.

A so-called committee of fifty, which was appointed several years ago to look into the question of inebriety, have made an extensive report regarding the liquor problem, and among other points brought out was a statement to the effect that predisposition itself was a more serious factor than an acquired alcoholic taste without predisposition. That is to say, the mere fact of hereditary influence was more liable to make that person alcoholic in itself than the endeavor on the part of a normal man to educate himself to the alcoholic taste. Therefore, finally, treatment of this disease begins quite early in life and resolves itself in surrounding early manhood with good health, healthful occupation and education, the latter of which should render his judgment and will power more stable.

THE IMPORTANCE OF MAKING THE PATIENT COUGH DURING AUSCULTATION OF THE LUNGS.

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Since a patient's prospects of recovery from pulmonary tuberculosis depend very largely upon the promptness with which the diagnosis is made it is evident that no pains should be spared in settling the matter as soon as possible. Many early cases do not show the presence of tubercle bacilli in the sputum and the physician must come to his decision from a careful study of symptoms and physical signs. It is very unfortunate both for his patient and for himself, if he does not make the most possible use of the simple measures at his command.

Percussion in incipient cases frequently gives negative results. Auscultation during quiet respiration may reveal only slight and indefinite changes in the breathing. At such a time the detection of râles is of the greatest importance. According to *Cornet (Die Tuberkulose, Vol. II, p. 674, 1907)* if in a certain area of one apex, a few râles can be constantly demonstrated in repeated examinations, there can hardly be any doubt as to the presence of tuberculosis.

Unless the patient is made to cough during the examination these râles may be readily overlooked and frequently are by many physicians. This is a point upon which recent authorities are agreed. *Lawrason Brown (Osler's Modern Medicine 1907, Vol. III, p. 293)* states that râles are rarely detected in incipient tuberculosis on quiet breathing and that when they can be detected on quiet breathing, the case is usually no longer in the incipient stage. In incipient cases they are heard only during forced inspiration following a cough. It is often necessary to explain to the patient, best by example, how to cough. "He should be directed to cough with some force as noiselessly as possible and immediately afterward to take a full, fairly rapid, inspiration. In certain cases a cough at the end of expiration followed by a full inspiration brings out râles heard in no other way."

Latham (Diagnosis and Modern Treatment of Pulmonary Consumption, 1907, p. 17.) says: "The presence of persistent crepitations in conjunction with other physical signs is the important point—the presence, that is, of crepitations over the same area on two or more occasions, which do not disappear when the patient *coughs*. In cases simulating tuberculosis very closely, any adventitious sounds which may be present, clear up when the patient coughs or breathes deeply—in other words, they are not persistent. It is of great importance that the patient should thoroughly expand his chest during the physical examination. It is also essential that during auscultation of any suspected area the patient should give a sharp cough. If crepitations are present this cough may clear them up and so save a serious error in diagnosis. If no crepitations are heard during ordinary respiration a sharp cough may be accompanied by some. These post-tussive crepitations are of great value in the diagnosis of consumption."

Burton-Fanning's views as regards this point (*The Open-air Treatment of Pulmonary Tuberculosis, 1907, p. 65*) are as follows: "In these very slight affections, auscultation affords, I think the most valuable information. The most reliable sign is the presence of a few clicks or fine crackles which may require a forced inspiration or even a cough to bring them out. While listening to the apices in front and behind, the physician *must always make the patient cough* before he concludes that there is no adventitious sound. The neglect of this precaution is a very common source of fallacy. In numberless cases the pathognomonic signs are only manifested after a short cough has been given. Breath sounds are unaltered or they may be marked by weakness or by a more or less bronchial quality."

Richard C. Cabot refers to this same matter in a recent article (*The Three Long-continued Fevers of New England, Boston Medical and Surgical Journal, 1907, clvii 281*): "I might, perhaps, say a word about the method of examination for tuberculosis because, although it is a well-worn subject, we are learning more all the time about it. I learned something a short time ago during a visit to Dr. Trudeau at Saranac. You know the old procedure for bringing out crackling râles at an apex, by getting the patient to cough and then breathe just after it. A patient came to me the other day to be examined for lung

trouble. After I had made her cough and breathe in this way she said: 'I can always tell whether a man who examines my lungs knows how to do it; if he doesn't make me cough and then breathe, I know he doesn't know his business.' Luckily I happened to know that point and so didn't fall under her disapproval. Dr. Trudeau and his assistants not only make the patient breathe hard and cough but prescribe first, a long inspiration, then full expiration, and a cough at the end of expiration. That they say will stir up râles and make them audible when nothing else will do it. That was a procedure I hadn't known and therefore I pass it on to you."

(No special stress is laid in most of the older text books upon the necessity of making the patient cough during the examination. Even in articles published in current literature this point is not always emphasized. In Dr. Brown's paper before the New York State Medical Society, however, the matter is adequately discussed. (*The Diagnosis of Pulmonary Tuberculosis*, *N. Y. State Medical Journal*, 1908. See also his paper on the same subject in *THE ALBANY MEDICAL ANNALS*, 1908, xxix, 323.)

Graduates from even the best schools in the country do not always seem to have been impressed with the value of these procedures and it is evident in many cases that their attention has not been particularly called to them. The writer has known of many physicians of good reputation being severely criticized by patients for neglecting to make use of these simple diagnostic measures. In view of these facts it seems worth while to once more insist upon the importance of the following simple procedures during auscultation, the value of which the writer can vouch for from personal experience. The patient should be stripped to the bare skin and down to the waist. If desired a light blanket or chest cloth may be thrown over the shoulders. Every part of the chest should be listened to, first during quiet breathing, then during a cough and a following deep inspiration, then during an expiration followed by a cough and a deep inspiration. As the procedure is somewhat fatiguing the patient should be allowed to rest whenever he feels tired. He should hold a clean handkerchief or piece of gauze in front of his mouth while coughing.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
DR. A. R. MOULTON, FIRST ASSISTANT PHYSICIAN, PENNSYLVANIA
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(Continued from July Annals, page 561)

(CHAPTER XIV—*Continued*)

Mary was very earnest in the matter, and seemed very much excited. "Now place your hands upon the table, keep very still, and think of nothing but what you are trying to do," were the directions the leader gave to the half dozen or more insane women, who were seated around the table. "You will soon hear raps upon the table."

Nervous Mrs. Minot jumped up and said: "I don't think I had better try." She was persuaded to sit down again. Nora was banished for laughing.

After waiting quietly a while, Mary broke the silence; "Hark! Hark!" She bent her head and listened, with wild eyes and burning cheeks.

"Listen," she said, "I can hear them!"

Miss Reeves began calling over the letters of the alphabet, but she had not gone far when the circle broke up in confusion. Mrs. Minot cried, and Mrs. Griggs, who had been looking on, declared that she would "not be after staying where there were spirits." Johanna sat devoutly making the sign of the cross, while Mary scolded angrily, because they made a disturbance. Miss Reeves told her that she would make a powerful medium.

Later in the night the attendants who placed the girl in restraint, found her "powerful" in the extreme.

Miss Reeves did not have another circle; the first attempt not proving a success.

Mary was usually very kind to Ruth. She would lift and carry her with but little effort. She would not allow other

patients to trouble her, and often she sat upon the floor, with her head resting upon Ruth's lap, and told, in a low voice, stories of her past life; and, although Ruth did not speak, a strong friendship existed between them.

When Mary had, what the attendants called, her crazy spells, she could not be trusted. For a few days she had been surly, without a violent outbreak. Sitting down by Ruth she said: "Now, I am going to whip you." She commenced striking Ruth's limbs, very gently at first, and then with more force.

Ruth was not strong, and her limbs, nearly paralyzed from lack of using, were sensitive to the touch. Tears ran down Ruth's face.

"Why! She is crying," said Mary to Miss Reeves, who sat near. "Do you think it hurts her?"

"No, I don't think it does," said the attendant, "She is just like a baby. It will start the circulation and do her good." Mary kept on until another patient interfered and threatened to tell the doctor, adding; "Of course it hurts her, and you are very cruel."

Dr. Field stood high in the estimation of his attendants; indeed, it was rumored in the sitting room that Miss Reeves, after forty years of discretion, had, yielded to Cupid's wiles, and bestowed her affections upon him. His self-esteem being within bounds, and the honor unexpected, he did not seem to realize the state of affairs. Possibly, his eyes were turned in another direction.

Miss Reeves's duties soon called her elsewhere; and, happily for ward four, some girls from the Provinces, who were especially fitted for the work, were stationed there, and under their regime, affairs in the sitting room were more harmonious.

Ruth's husband came again to visit her, and she was carried to the reception room in a chair. To him, she seemed much worse than when he saw her last. He talked to her, but she answered only in a way that he could not hear. He took her hand in his, and she clung to him, trying to beg him not to leave her. Every time that Mr. Campbell saw his wife, he had less hope that she would recover. He did not speak to her of the boys, for he thought she did not understand, while all the while, the mother's heart was crying for them. Before Mr. Campbell left the hospital, Dr. Hale, the Superintendent, told him, that, although he could not say that it was impossible for his wife

to recover, it certainly was not at all probable that she would ever be well. He could give him no encouragement.

Will was now sixteen years old, and a great help, and comfort to his father. He had all the care of his younger brother, while their father was at work, taking him to school, and home again, every day. Mr. Campbell's life was devoted to his children. If Ruth could have seen how faithfully he fulfilled his trust, her burden would have been lighter. Whatever the delusion with which she battled, her children were never absent from her mind.

She still tried hard to die of starvation. She had purposely ejected the food from her stomach, until it was very easy to do so. One morning, Dr. Field said to Miss Ray, as they were making preparation to feed Ruth, "You can bare her arm, I am going to give her medicine."

"What is that for, doctor? Has she been breaking glass?" asked Miss Ray with a smile.

"I intend to oblige her to retain her food, if I can," replied the doctor, "I will put her to sleep, and by the time she wakes the food will be digested."

"Is it morphine, doctor?"

"No, we use but little of that. It is hyoseamine, a powerful drug, a French discovery, I believe."

Ruth heard, and thought she did not care what it was, if it caused her to sleep. Subsequently, she had reason to change her opinion.

After injecting the medicine, the doctor left Ruth in the care of an attendant, saying,—“I will be back soon and feed her.”

Soon Ruth felt a strange sensation creeping over her. She tried to swallow but her throat seemed closing. A deathly faintness succeeded, and her hands did not seem a part of her. They moved wildly about, and she could not control them. She heard a strange voice say,—“Put her upon the bed.” Something hurt her mouth as though her teeth were being extracted. The hands that touched her seemed icy cold, and voices sounded faint and far away. Opening her eyes, she saw people standing around the bed, and they were copper colored! She thought they had painted their faces, thinking to frighten her. When the feeding tube was run down her throat, the sensation was terrible. It writhed in her mouth like a snake, and it was cold, cold like death. She could not move hand or foot. The doctor stood

beside her, watching her pulse, while some one wiped the perspiration from her face. "This must be death," thought Ruth. She had suffered pain before, but nothing like this. It was the quintessence of suffering, yet above it all came the joyful thought, "I am going at last, thank God!"

The deep sleep into which she sank, was not death. For hours she was oblivious to what went around her, and then, slowly she returned to consciousness. The attendants were bringing in supper, and soon the gas was lighted. Ruth noticed a patient who was lying upon a bed near her, who seemed to have veins of blood upon her face. After a while every one looked white like wax. The doctor came in the evening and fed her again, but her stomach could not retain the food. She had spasms at intervals through the night, when her limbs twitched convulsively, and she felt a prickly sensation, such as we have when, as we say, "our limbs go to sleep." The night-watch came with her lantern and watched her, placing her fingers upon the pulse in Ruth's neck. As the effect of the medicine wore away, the spasms ceased, and toward morning Ruth slept.

A few days after, Dr. Field repeated his experiment, and Ruth suffered in much the same way as before. She did not have spasms, but she became very thirsty. She had not realized what the word meant before. There was not a particle of moisture in her mouth or throat. The gnawing of hunger was nothing compared to this. Bravely she waited for what might come. Remembering the parable of, "Lazarus and the rich man," her soul turned from a heaven that would not grant a drop of water to a thirsty soul. Hours of agony passed, and then, as the effects of the medicine wore away, moisture gathered under her tongue, and the thirst was allayed. Again, death had passed her by.

"Behold, we live through all things,
Famine, thirst, bereavement, pain,
All grief and misery, all woe and sorrow;
Life inflicts its worst on soul and body,
But we cannot die.
Though we be sick and tired and faint and worn,
Lo! all things can be borne."

CHAPTER XV

"If I wished to paint a picture of despair, I should take Ruth for a model," remarked Dr. Field to the supervisor who assisted him.

"Why don't you photograph her, Doctor?" said Miss Ray in reply.

"That is a good idea, and I think I will do so; and while I am about it, I will make a picture of Sarah. She will pass for faith. They are very peculiar patients and I should like their pictures." The next morning, he carried a camera to the sitting room, and with the assistance of Dr. H,—who stood behind Ruth, and held a sheet for a background, he obtained a negative.

Ruth felt troubled and wished to cover her face with her hands, but she lacked the power to do so. If it had happened at an earlier date, she would have thought it was done to ridicule her; but she was learning to have confidence in Dr. Field, and she did not think that he would be so cruel. No doctor before him had caused her as much suffering, but she did not remember it against him, for she knew why it was done.

Pictures of the dead are sad to see, but we comfort ourselves, thinking of the beautiful soul that has left the casket. This picture of Ruth showed the prison of a soul. A thin, wan face, white as the dead, every lineament showed intense suffering, eyes sunken and closed, hands clasped so tightly that the nails cut the flesh,—this is the picture that my pen draws for you, yet, although your imagination be vivid, you can hardly see it.

One evening, while some of the inmates of the sitting room were singing hymns, a new patient was brought in. She was about twenty-five years old, of fair complexion, with her hair, which was very light, hanging in a heavy braid below her waist. With a loud voice she joined in the singing, not stopping, even, when the others did. She proved to be very melancholy and somewhat morose. The doctor gave directions that she should sleep in the sitting room near the night-watch. Hearing a disturbance in the night, Ruth opened her eyes, and the sight that met her gaze nearly stopped her heart's beating. The night-watch was on the floor, and, bending over her, was the new patient, whose eyes gleamed like those of a tigress; her hair hung loosely about her, while her hands clutched her victim's throat. It was a struggle for life, with the odds against the

night-watch, and the maniac would have finished her work, had not Nora sprang from her bed, and seized the raving woman by the hair, pulling her with all her strength, and at the same time, screaming loudly for help.

Taken by surprise, the maniac turned and faced Nora, while the night-watch, released, sprang to her feet, and grappled again with her foe. "Pound on the door, Nora. Call the girls," she managed to say. Help soon came and order was restored, Nora received great praise for her heroism.

To tell all that transpired in the sitting room would fill volumes. Ruth heard the sad stories of many lives. One had carelessly destroyed a will, thereby causing much trouble. A sweet, sensitive, creature, she could not bear the imputations cast upon her. Another, worn by constant watching, had fallen asleep, at the bedside of her sick husband; and when she awoke, he had passed away. Some had overworked; two were opium slaves; another had buried a child; while one would soon become a mother. Elsie was a girl of twenty, early orphaned and put out to service; she had found life's battle harder than she could bear. Unrequited love had victims here; with some intemperance had done its work.

Ruth had been so long an inmate, and had seen so many sad sights and had heard so many tales of sorrow, that it became a part of her daily life. It was hard to realize that those unfortunate people had ever been well and happy. "We know not what the days may bring," or as Mrs. Griggs remarked to a patient who refused to assist one more helpless than herself, "Sometime you may be there yourself. You're born but not finished." Ruth heard a conversation, one night, that interested her. A young woman, came into the sitting room to chat with the night-watch. They talked of the best way to manage patients, the visitor remarking, that it was sometimes a good plan to frighten them into good behavior. "I helped try that on Ruth Campbell once," she continued.

"Do you mean that woman?" asked the night-watch, pointing to Ruth.

"Certainly I do. She used to scream nights when she was on the sick ward, and another girl and myself decided to stop her doing so. We got out of bed one night, and went to her room, and we pounded her with brooms until she was glad to stop."

"What if the doctor had found it out?"

"Oh, you have to look out for that, and you know she couldn't tell, and it didn't hurt her any."

Excepting the statement that it didn't hurt, Ruth could vouch for the accuracy of the story. Whether it was chance or Providence, that brought together those who now had the care of Ruth, it certainly seemed to be in her favor, that they had come. A casual observer would not say that she had improved.

A doctor who had formerly had charge of the ward, came in one morning with Dr. Field and stopping to look at Ruth said, "She doesn't improve any, does she?"

"I don't know about that," was the reply, "I think she does."

"Really! I fail to see it. In what respect is she better?"

"Well, I can hardly put it in words: the change is so slight, at any rate, I have no fault to find with her. I think she does the best that she can." They passed on, and, very likely, soon forgot their words, but Ruth did not forget.

"I think she does the best that she can." The words were a tonic, more potent than drugs.

Ruth's mind was certainly clearer, in some ways, than it had been. She did not know how long she had been in the hospital. She had tried to remember, and could not, until, chancing to hear an attendant tell a patient how to date a letter, she glanced at a paper lying near her, and saw that the date was the same. Then she tried to remember when she left home. It was days before she thought it out, but she did at last, and in a curious way. A sister had died in the fall of Centennial year. Then it slowly came to her that Walter was three years old when she left him, and also that he was one year and a half old when her sister died. She remembered that apples were ripe in the orchard when she came to the hospital, that it was in August, and that the present time was the middle of February, 1883. She, finally, was sure that she had been there five years and a half.

The attendants were nice, sensible girls, who tried to interest the patients. Ruth liked them all, but Beth was the one that she liked best to have take her turn in the sitting room. Ruth was sure Beth's life had seen hard places. Sometimes the girls had spelling matches, by way of entertainment. One day the word "Phthisic" went around the room. Several tried to spell it and failed. Mrs. Minot was a very intelligent person, and,

without doubt, knew how the word should be spelled; but, being very nervous, she did not take time to do anything properly.

"Mrs. Minot, I am sure you can spell the word for them," said Beth.

Mrs. Minot spelled the word so quickly, that she omitted half the letters. It was not so very amusing, and why it should have that effect upon Ruth, she could not have told herself, but she laughed outright! and it was some moments before she stopped. The attention of all in the room was attracted toward her. They were amazed! A miracle would not have astonished them more. After a while her laughter changed to crying.

"Poor Ruth," said Beth, "I think she knows how to spell the word."

Surely she did, for who has been to a country spelling school, and cannot spell "Phthisic?"

When Dr. Field came in he was told of Ruth's laughing and the cause.

"No wonder she laughed. I presume you could spell us all down," he said, turning to Ruth. "You must brace up. I want you to get well and go home to your children."

Ruth's tears flowed afresh at mention of her children. "There, doctor," said Miss Ray, "you have made her cry."

"It will do her good," replied the doctor, "I had rather she would cry, than sit there in that dormant state." The story of Ruth's laughing went the rounds of the building.

Insane people are often troubled by optical illusions. That their thoughts should sometimes take shape before their eyes, or that objects should become distorted by uncontrolled imagination, is not strange; but when, without a moment's warning, there appears before the eyes, something of which no thought has entered the mind, it is harder to understand.

It was nearly morning. The other patients in the dormitory were asleep, but Ruth had been lying awake, thinking over her troubles as usual, when by chance, she opened her eyes, and looking up, saw upon the wall over her head, the picture of a lady. She was not dreaming, she could see it plainly. It was like an oil painting, the face of a stranger, young and beautiful. So vivid was the picture that it seemed alive, and Ruth would not have been surprised if it had spoken; for indeed; she was not easily surprised, whatever happened. The picture did not vanish suddenly, neither did it grow dim; but, commencing

at one side, it slowly disappeared from view, as though the wall passed over it.

Ruth did not regard this phenomenon as supernatural. She believed there was some human agency connected with it, and finally settled it upon the broad shoulders of the doctors. She knew that they used a stereoscope to show pictures in the chapel, and thought they used the same means to throw the picture upon the wall.

Much of her suffering would have been prevented if she had spoken. Sitting still all day, she often shivered with the cold when the room was sufficiently warm for those who were able to walk about. Her feet were nearly frozen one cold winter day. One of the patients dressed her in the morning, and, not finding her stockings, had put on her slippers without them, and forgotten to tell the attendant. The day was bitter cold and her feet ached until they were numb. For a long time they were very sore, and the nails loosened and came off her two large toes. A piece of nail became broken and torn, so that it caught her stocking, when the attendant tried to put it on her foot, hurting her so badly that she drew her foot away. Beth happened in and she was told that Ruth was contrary. "She is not willing to have her stocking on," said the girl. "Have you looked at her foot? It may be sore."

Noticing tears upon Ruth's face, she examined the foot and saw the torn nail. She cut the sliver carefully away, and called the doctor's attention to the condition of Ruth's feet. He bandaged them with liniment, remarking as he did so,—“She did not rebel without reason.”

Again the winter days had passed and spring had given place to summer. The days, to Ruth, were long and weary. In times past, when she had worked all day, and thought herself tired, she did not know the meaning of the word. Sitting in the same position from six o'clock in the morning until eight at night, she counted the hours away by the strokes of the clock. Thirteen hours more, twelve, eleven, and so on through the day. She was sick in bed for a few days, and during the time an aunt and cousins visited her. She knew their voices, although she did not see them. Her cousin said, "Tell her about Father." Then, her aunt told her that her uncle had gone away. Afterward when some one remarked in her hearing that the visitors were dressed in mourning, she knew that her uncle would not

come back. A niece visited her also with a young friend. "Can it be possible," she exclaimed, "that this is my Aunt Ruth? I can hardly recognize her."

Mr. Campbell came, and went away, each time more discouraged than before, and yet, Ruth had really changed for the better! She took more interest in what went on around her.

Sometimes the doctor would sit down and talk to her, telling her an amusing story, perhaps an incident in his past life. He told her some of his experience in school teaching, and how nicely he managed the care of the kitchen garden, for his mother, when home on a summer vacation. When the frosts came, he covered the cabbages to prevent them from freezing and was laughed at, for his trouble. He reasoned with her, and urged her to make an effort to get well. Watching her closely, he became certain that she understood what was said to her.

Ruth took a silent part in a romance, in which the doctor and supervisor were chief actors. Quick to note what was passing around her, to her ear the doctor's voice had a different tone when he spoke to Miss Ray, and she knew that they were more to each other than passing friends.

No one upon the ward received more attention than Mary, the doctor and his assistants doing their best to make her happy. Upon her birthday she received more presents than most girls have when in their own homes, the matron giving her some nice grey flannel for a skirt. Mary made the skirt, very neatly, finishing the hem with feather-stitch. An attendant gave her a ball of scarlet yarn and she knit lace for trimming, an accomplishment which she had learned at the school. When it was finished, she seemed quite proud of her work; but the day after, in angry mood, she tore it into shreds, and threw it from the window. A week later something took place that caused Mary's removal from the ward.

It was evening, and the patients were in bed. Beth sat by the table sewing, waiting for the night-watch who went on duty at ten o'clock. There being more than the usual number of patients, Ruth slept that night in a bed made upon the floor near the table. An attendant from the ward came in to keep Beth company. Mary appeared in the sitting-room, clad in her night-dress.

"I am hungry," she said; "get something for me to eat."

"I cannot leave the room," Beth replied, "and you have had your supper, Mary. Be a good girl and go to bed."

Mary obeyed rather sullenly but soon returned creeping upon her hands and knees. When she reached Beth, she said to her,—
"I'm going to eat you."

The girls laughed, thinking it a joke, and Beth said, "Don't eat me, Mary, there's Ruth, I think you will like her better." To their surprise, Mary turned upon Ruth, and before they could pull her away, she had left the print of her teeth upon Ruth's arm. A desperate battle ensued, the girls calling loudly for help. Froth oozed from Mary's lips, and her eyes were like balls of fire. Two attendants ran in from the ward, and, snatching a sheet from a bed near by, they threw it over the maniac's head, then throwing her upon the lounge, they managed to hold her until the doctor arrived; she was then placed in restraint and removed to another part of the building. Fortunately the bite Ruth received was not dangerous, as the skin was not broken.

(To be continued)

Editorial

"The *Bride of Lammermoor*" (says James Ballantyne) "was not only written, but published before Mr. Scott was able to rise from his bed; and he assured me that when it was first put into his hands in a complete shape, he did not recollect one single incident, character, or conversation it contained. He did not desire me to understand, nor did I understand that his illness had erased from his memory the original incidents of the story, with which he had been acquainted from his boyhood. These remained rooted where they had ever been; or, to speak more explicitly, he remembered the general facts of the existence of the father and mother, of the son and daughter, of the rival lovers, of the compulsory marriage, and the attack made by the bride upon the hapless bridegroom, with the general catastrophe of the whole. All these things he recollected just as he did before he took to his bed; but he literally recollected nothing else—not a single character woven by the romancer, nor one of the many scenes and points of humor, nor nothing with which he was connected as the writer of the work. 'For a long time,' he said, 'I felt myself very uneasy in the course

of my reading, lest I should be startled by meeting something altogether glaring and fantastic. However, I recollected that you had been the printer, and I felt sure that you would not have permitted anything of this sort to pass.' 'Well,' I said, 'upon the whole, how did you like it?'—'Why,' he said, 'as a whole, I felt it monstrous gross and grotesque; but still the worst of it made me laugh, and I trusted the good-natured public would not be less indulgent.' I do not think I ever ventured to lead to the discussion of this singular phenomenon again; but you may depend upon it, that what I have now said is as distinctly reported as if it had been taken down in short-hand at the moment. I believe you will agree with me in thinking that the history of the human mind contains nothing more wonderful."

J. G. LOCKHART.

Narrative of the Life of Sir Walter Scott, Bart



**"A Mind
That Found
Itself."**

When Miss Dix accomplished the purpose of her crusade against the detention of the insane in jails and almshouses, and the state system of care was established, a great and final end was thought to have been attained. But the organization of state asylums is now known to be only a step in the evolution of a principle, and the elusive ideal slips farther away each time a step forward seems to bring it within reach. The achievements of the last half century have been the recognition of the pathological nature of insanity and the charitable purpose to separate the insane from other defectives in sanitary dwellings under medical care. The task has been an enormous one, and under the pressure of the increasing number seeking and entitled to the protecting arm of the state, is now and again threatened with failure. It is well known and acknowledged that not over five per cent. of the patients in so-called State hospitals belong in the curable class, and that the dominating aspect of our institutions is that of custody rather than treatment. Some would make shift to return to earlier methods; others look beyond the superficial utilitarian problem and study the defect at its origin. In any event the mile stone has been reached and energies must sooner or later be directed toward the early treatment and prevention of mental disorders, that the appalling burden of chronicity and helplessness may be diminished. And as Miss Dix proved a potent force in correcting

the abuses of the past, so is the new era heralded by a prophet of no less vigor, no less persistence, and the much greater intensity of purpose born of personal experience.

In 1894, while a student in Yale University, Mr. Clifford Whittingham Beers had the care of a brother suffering from the convulsive seizures incident upon a tumor of the brain. This painful service resulted in a nervous breakdown and apprehension of epilepsy which finally became a fixed idea. Mr. Beers was sent to a general hospital, afterward to a private sanitarium, later to a private hospital for the insane, and finally to a state institution. He passed from delirium into a condition of active delusions of persecution with mental depression, and later became restless, obstinate and quarrelsome. Of the incidents of his sickness he retains good memory, and he has published the history of his experiences in a book with the title, "A Mind that Found Itself: An Autobiography," which is destined to become one of the classics of psychological literature. It is no new thing for cured, and even for uncured patients, to publish their thoughts and reflections but nowhere is there such an accurate analysis as this, and Mr. Beers deserves the thanks of all who study insanity for his painstaking narrative. It carries the readers away from technical dissertations, in recent years so frightfully burdened with the obscurity of an ill-understood and misunderstood terminology, for the most part "made in Germany," and brings him face to face with the feeling and reactions of a distorted mind.

The purposes of Mr. Beers' book are: first, to rob insanity of its many terrors, and to exploit the humane and scientific principle of Non-Restraint; secondly, to found and endow a National Society to lead to effectual reform and to ensure the correction of *all* abuses; and, thirdly, to induce the beneficent rich to aid the States and Nations by supplying funds for the erection and endowment of model institutions wherein mental and nervous diseases, in their incipient and curable stages, may be treated with the maximum of efficiency. His ideas are practical, and though not in advance of the time, are well abreast of the most advanced thought.

Mr. Beers is now engaged in the formation of a "National Committee of Mental Hygiene," and has secured acceptances from several to whom the plan has been proposed.

Mr. Beers has undertaken a Herculean task! With appreciation of the work accomplished and that to be done, he proposes

to co-operate with existing institutions, to assist them to overcome their difficulties, and to correct their defects. In this he differs from reformers of the past whose activities have been so often spent in adverse criticism and hostility. Years will be needed for the attainment of results, but if officers of institutions meet the proposed society half way in the spirit of co-operation outlined, undoubted benefit will accrue to all.

To Mr. Beers belongs the credit of a clever conception of a way to meet a want, and it is to be hoped that his strength and enthusiasm may carry him to a realization of his expectations.

Little Biographies and the Eponymic Diseases

XXXI. THOMAS ADDISON

(1793-1860.)

THOMAS ADDISON, M. D., F. R. C. P., was born at Long Benton, near Newcastle-on-Tyne, Cumberland, in April, 1793. He was of rather humble origin, the younger son of Joseph Addison, a grocer and flour dealer, but a man of enlarged views, who gave his son the best elementary education within his reach and aspired to start him in life on a much higher social level than his own. Thomas particularly distinguished himself during his school days in his acquirements in Latin, a familiarity which was later exemplified by his habit of taking down all his lecture notes in that language. After his elementary education was completed he went to the University, Edinburgh, from whence he graduated as Doctor of Medicine, August 1, 1815, selecting for the subject of his inaugural thesis "De Syphilide."

He then went to London to practice, where it is said he knew but one person, an old fellow-student. Fortunately, by this time, his father had the means, as he had always had the desire, to afford his son every possible advantage for acquiring a full knowledge of his profession. Addison was soon appointed house surgeon to the Lock Hospital and at about the same time entered as a pupil of Dr. Bateman at the public dispensary. In these positions he took such an interest in the subject of syphilis and

laid such a firm foundation in the knowledge of skin diseases in general that, although it was a topic not in strict accordance with the branch of the profession which he adopted, he was long considered an authority therein by those who knew of his skill. His fame in this line would have been greater had he not sought to hide it, as he desired to avoid the pursuit of this subject as a specialty. He disliked any specialty holding that it savored of quackery; he always maintained that the true physician must understand surgery well and that the good surgeon must know the principles of medicine. His knowledge of dermatology is well illustrated however, by the unrivaled collection of wax models in the museum at Guy's Hospital which were prepared during a period of years under his immediate supervision. About the year 1820, Addison entered as a pupil at Guy's Hospital, with which institution his life as a physician was thereafter inseparably connected. He was appointed Assistant Physician in 1824, and Lecturer in Materia Medica in 1827. In 1837 he was appointed full Physician to the hospital and was, at the same time, selected as joint Lecturer with Dr. Bright on the Practice of Medicine.

He never succeeded to, nor did he seem desirous of, a large private practice, and its attendant wealth, in fact, he was by nature and manner unfitted for it, but he was well qualified for teaching, whether in the wards or in the lecture room. He was for many years acknowledged as the spirit which influenced the medical doings at "Guy's," and to him is due in large measure the prominence which that institution attained at that time in medical education in London. As a teacher he was impressive and popular, his interest in his class genuine and unfeigned, and in the wards he was "beloved by his patients for his unwearied attention and kindness with which he devoted his eminent talents to the cure of their ailments or the relief of their sufferings." (Quotation from his memorial tablet in the chapel at Guy's Hospital.) Among the distinguished men who were at one time pupils of his may be mentioned Dr. Golding Bird and Sir William Gull. He continued working there until his health gave out, when he resigned his position and retired to Brighton to live. Here he attempted self-destruction on several occasions, due to impaired health, which affected his mind, and died June 29th, 1860, as the result of injuries he sustained in jumping from a

window two days before. He was buried in the church yard at Lonercoast Abbey, Cumberland.

"Addison was chiefly remarkable among his contemporaries for the minute accuracy of his diagnosis, in which important point he had few equals and no superior. He was always ready to discuss newly-started theories, but he never for a moment allowed them to interfere with the results of his mature experience. Possessing unusually vigorous perceptive powers, being shrewd and sagacious beyond the average of men, the patient before him was scanned with a penetrating glance from which few diseases could escape detection. He never reasoned from a half-discovered fact, but would remain at the bed-side with a dogged determination to track out the disease to its very source for a period which constantly wearied his class and his attendant friends. If at last he could lay his finger on the disease his victory was attained, and his painstaking satisfactorily rewarded. For with him diagnosis was the great and too often the ultimate object of an industry of search, a correlation of facts deduced from scientific observation, and a concentration of thought rarely combined in the individual physician. To those who knew him best his power of searching into the complex framework of the body and dragging the hidden malady to light appeared unrivaled; but the one great object being accomplished the same energetic power was not devoted to its alleviation or cure."—Dr. Wilks.

Addison is best known to the medical world at large by the fact that he first described the disease now known by his name (first called so by Trousseau), a disease which had been hitherto unsuspected, and assigned its causation to a lesion in the supra-renal capsules, structures the physiology of which at that time was entirely unknown. His discovery was made accidentally, I quote his own words: "It was whilst seeking in vain to throw some additional light upon this form of anaemia (pernicious) that I stumbled upon the curious facts which it is my more immediate object to make known to the profession; and however unimportant and unsatisfactory they may at first sight appear, I cannot but indulge the hope that, by attracting the attention and enlisting the co-operation of the profession at large, they may lead to the subject being properly examined and sifted, and the inquiry so extended as to suggest, at least, some interesting physiological speculation, if not still more important practical

indications. The leading and characteristic features of the morbid state to which I would direct attention are, anaemia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change in the color of the skin, occurring in connection with a diseased condition of the suprarenal capsules.'

He reported eleven cases and though many cases of this comparatively rare disease have been since described, but little has been added to its symptomatology and pathology. We do know however, that anaemia is not by any means a constant feature of the disease, in fact, anaemia is not usually present. Addison believed that any lesion of these glands would cause the disease, and though this is still realized, we now know that the usual pathological process is caseous tuberculosis; furthermore, cases are found in which, though no symptoms of the disease have been present during life, the bodies are found at autopsy to be much diseased. This is probably due to the presence of accessory glands which are uninvolved.

Rolleston thus summarizes the condition of the suprarenal bodies in Addison's Disease: "(1) The fibrous caseous lesion due to tuberculosis, far the commonest condition found. (2) Simple atrophy. (3) Chronic interstitial inflammation leading to atrophy. (4) Malignant disease invading the capsules, including Addison's own case of malignant nodule compressing the suprarenal vein. (5) Blood extravasated into the suprarenal bodies. (6) No lesions of the suprarenal bodies themselves but pressure or inflammation involving the semilunar ganglia. The first is the only common cause of Addison's disease. The others, with the exception of simple atrophy may be considered as very rare."

Lewin's extensive statistics show: typical cases of Addison's disease with healthy suprarenal capsules, 12 per cent.; typical cases of Addison's disease with diseased capsules, 88 per cent.; diseases of the suprarenal capsules without bronzing of the skin, 28 per cent.; diseases of the suprarenal capsules with bronzing of the skin, 72 per cent.

Of more practical value and of scarcely less originality were his contributions to the anatomy and pathology of the lungs (1837-1843), to pneumonia (1840), and to phthisis (1845). "To those," writes Dr. Wilks, "who knew Addison, it is almost absurd to rest his fame on a discovery made toward the close of his

career, and when his clinical teaching had reached its end. To his pupils the essay on Suprarenal Disease is nothing compared with what he did during a long series of years in the elucidation of the forms of phthisis and some other diseases. It was not a mere scientific discovery, but his powerful lectures which impressed the last generation of Guy's men. Whilst to us his work on suprarenal disease is a trifle, to the outside world and to posterity it may be that which will perpetuate his fame." Addison's memory and merits have been duly honored at Guy's, the sphere of his life's labor. His bust, the gift of his colleagues, is in the Pathological Museum, one of the new medical wards is named after him, and in the chapel of the hospital there is a memorial tablet.

Though looked upon as a proud and haughty spirit Dr. Addison was in reality nervous and timid. He was often heard to say that he never addressed a meeting, even where he was surrounded by his pupils, without being more or less disconcerted on first rising. There is reason to believe that he suffered most acutely from this failing. No doubt he was credited with great physical and moral energy without recognizing that a quick, hasty and impassioned manner of expression is not infrequently the result of a deficient controlling power. We know that his mind was to the last degree susceptible, and that although wearing the outward garb of resolution, he was beyond most other men most liable to sink under trial.

Addison was the author of "Observations on the Disorders of Females, Connected with Uterine Irritation," 8vo, London, 1830 (conjointly with Mr. John Morgan); "An Essay upon the Operation of Poisonous Agents upon the Living Body," 8vo, London, 1829; "The Elements of the Practice of Medicine," vol. 1, London, 1839. This was the first volume of what was to have been a conjoint work by Drs. Bright and Addison, but the later volumes which were to have been more from the pen of Dr. Bright were never published. His contribution "On the Constitutional and Local Effects of Diseases of the Suprarenal Capsules" was published as a quarto, with plates, in London, in 1855. He took little pains to have the results of his researches published in the medical journals and many of his most original and valuable writings were contributed to the Guy's Hospital Reports. These latter, with some of his other papers, were published by the New Sydenham Society in one volume under the

title "A Collection of Published Writings of the Late Thomas Addison, M. D., Physician to Guy's Hospital," 8vo, London, 1868.

Addison was president of the Royal Medical Society of Edinburgh in 1814, was admitted as a Licentiate of the Royal College of Physicians, London, in 1819, and as a Fellow of the same society in 1838, and was president of the Royal Medical and Chirurgical Society in 1849 and 1850.

CHARLES K. WINNE, JR.

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Scientific Review

AMNESIA

Under the title "L'Amnésie (*Au Point de Vue Séméiologique et Médico-Legal*)" Drs. G. Dromard et J. Levassort have issued a monograph from the press of Félix Alcan, Paris, summarizing comprehensively the present views of this important subject.

The authors have divided their work into three parts. The first part is a concise but efficient exposé of the nomenclature relating to the topic under consideration. The second part comprises three chapters devoted to the study of the functional amnesiae, the organic amnesiae and the so-called illusions of recollection (*illusions du souvenir*). The third part is a practical discussion of the medico-legal significance of the various forms of amnesia, an adaptation of the foregoing considerations to the more practical problems of medical jurisprudence.

There is not one memory, but several. The amnesiae, or dis-

orders of memory, have been classified in various ways by different authors, but these classifications may be conveniently grouped as follows:

- (a) Psychologic classifications.
- (b) Etiologic classifications.
- (c) Clinical classifications.
- (d) Anatomic-pathologic classifications.

Of all four, the clinical classification alone can answer the purposes of practical study.

The symptomatic or clinical nomenclature of the amnesiae may be based on the following elements:

- 1. Pathogeny.
- 2. Degree.
- 3. Duration.
- 4. Evolution.
- 5. Chronologic localization.
- 6. Constituent attributes of memory more particularly involved.

From the standpoint of pathogeny, we recognize:

- 1. Functional (or dynamic) } amnesiae.
- 2. Organic (or destructive) }

With regard to the extent to which memory is impaired, we distinguish:

- 1. Partial } amnesiae.
- 2. General }

With reference to the duration of the disorder, we speak of:

- 1. Transitory or temporary } amnesiae.
- 2. Durable or prolonged }
- 3. Permanent }

If we have in mind the mode of onset or the general course of the amnesia, we may qualify it as being:

- 1. Sudden (acute).
- 2. Progressive.
- 3. Periodic or intermittent.

From the standpoint of the chronologic localization of the events or period affected by the disorder of memory, we speak of:

- 1. Retrograde } amnesiae.
- 2. Anterograde }
- 3. Retro-antegrade }

With reference to the particular attributes of memory involved, we have another interesting classification, one which represents a study of the qualitative alterations of memory.

This chapter comprises, in the first place, alterations of the general qualities of memory; under which heading belong:

1. Amnesia of conservation (or fixation).
2. Amnesia of reproduction (or evocation).
3. Biologic amnesia (loss of organic or automatic memory).

In the second place, we have to consider alterations of the special qualities of memory, and have reference to either a total or partial destruction of prevalent individual sensori-psychic memories (*prévalences mnésiques sensorio-psychiques individuelles*).

Thus, we have

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|-------------------------------------|---|
| 1. Visual amnesia | $\left\{ \begin{array}{l} \text{illusions, perversions, false recognition} \\ \text{—topographic agnosia, asymbolia.} \end{array} \right.$ |
| 2. Auditory amnesia | |
| 3. Olfactory amnesia. | $\left\{ \begin{array}{l} \text{illusions, perversions, memorial deficits} \\ \text{of verbal, tonal or musical nature.} \end{array} \right.$ |
| 4. Gustatory amnesia. | |
| 5. Tactile amnesia (astereognosis). | |

To this group might be added a *coenesthetic amnesia*, which deserves more than a passing mention, as it includes paramnesiae involving even the notion of individuality (auto-agnosia).

Of functional amnesiae, that associated with the psycho-neuroses claims the greatest share of the medical expert's attention; although the amnesiae of toxic origin are not to be ignored.

Among organic amnesiae, that of general paresis, in its first stage, called its medico-legal stage, is unquestionably the most important.

The first group of amnesiae which the authors discuss includes the various disorders of memory dependent upon purely functional derangement of the nervous centers. The fundamental character of the functional amnesiae resides in their evolution. They are essentially paroxysmal, appearing with the abruptness of an attack, of a seizure, and disappearing likewise. The conditions in which a functional amnesia may be encountered are the psycho-neuroses, more particularly epilepsy and hysteria; but, under this heading, also belong the traumatic and toxic amnesiae, as well as the amnesiae associated with certain forms of mental disorder (*amnésies vésaniques*).

Traumatic amnesia is the very type of amnesia of sudden onset. It may appear under one of three very different circumstances. The traumatism may have determined actual lesions about the

cranium or cerebrum, in which case the amnesia is associated with a fracture of the skull or a hemorrhage within it, *i. e.*, it is due to actual contusion or compression. Or, the traumatism has involved the cranium without causing actual lesions, when the amnesia is due to simple concussion of the brain (*commotion cérébrale*). Finally the traumatism may have not at all involved the head but produced a lesion in some remote part of the body; the consequent amnesia is then attributable, probably, to emotion (to moral traumatism). This amnesia may be simple, *i. e.*, relating only to the facts of the accident. Retrograde amnesia, however, is one of the more frequently observed forms of traumatic amnesia; not only has the subject no recollection of the accident itself, but he has likewise forgotten facts which occurred previous to it. The length of the period forgotten is extremely variable. Occasionally, it is the anterograde type of amnesia which presents, in which case the loss of memory is in relation only with what has taken place since the accident. But when this latter form of amnesia does obtain, it is rarely pure; more commonly there is associated a loss of memory regarding the details of the traumatism itself as well as of the events which took place during the preceding period, so that it partakes of both retrograde and anterograde amnesiae, and is, therefore, truly a retro-antegrade amnesia. Aside from an anterograde amnesia of evocation or reproduction, there may be an anterograde amnesia of fixation or preservation. The subject is not only unable to recall events which occurred during a variable length of time elapsed since the accident, but he likewise manifests a transitory incapacity of storing up memories of presently occurring events; so that, he does not recall, even at intervals of a few minutes, what has just taken place before his very eyes. Thus, in a good number of instances, we have to do with a retrograde amnesia to which is added a doubly anterograde amnesia. When simple, this traumatic amnesia is usually permanent; when retrograde, it may be either permanent or temporary; when anterograde, it may likewise be either permanent or temporary, but in the majority of instances, anterograde amnesia is transitory.

Occasionally, partial amnesiae have been observed after traumatism, such as a loss of memory for proper names, for a foreign tongue, for mathematics, or for music.

Certain authors have called attention to the occasional dis-

appearance, subsequently to traumatism, of a pre-existing delirious state.

The toxic amnesiae, of which that due to alcohol is both the most important and the most typical, are classed here among the functional amnesiae, but evidently, the prolonged ingestion of toxic substances ultimately determines cellular alterations in the higher nervous centers with consequent persistent impairment of their physiologic functions, leading therefore to permanent amnesia of fixation and evocation.

But, as ordinarily seen, the toxic amnesiae partake more especially of the characters of functional amnesia.

Alcoholic amnesia may be studied in its relation to simple inebriety, to alcoholic delirium proper (delirium tremens) and to the delirium determined by alcoholism in a subject presenting the stigmata of degeneration.

The amnesia following ordinary acute intoxication is usually simple. Very frequently it is incomplete, the subject recalling some of the facts that took place during his state of inebriety, but his memory lacks precision, he does not feel certain as to the manner in which he himself has acted and there exists much confusion in his mind with regard to the exact relation of events to both time and place. It is thus rather with a paramnesia than with an amnesia, that we have to do. Finally, this simple alcoholic amnesia is very often transitory.

After delirium tremens, even in its mildest form, amnesia appears to be constant. It may be of varied type, even retro-antegrade, but generally it is transitory, although in certain instances it may extend over a considerable period of time.

Of the amnesia associated with the neuroses, practically all that has to be said concerns epilepsy and hysteria. In chorea, in Grave's disease, as well as in neurasthenia, there enters another element, that of a primordial disorder of attention, and where attention is wanting there can hardly subsist any recollection.

AMNESIA IN EPILEPSY

Between epilepsy and amnesia the bond is so intimate, that when a total blank is observed in the memory of an individual, at once the idea occurs to us that we have to do with epilepsy, the two great essential characters of which are: the unconsciousness and the correlative amnesia.

The amnesia of epilepsy may be of varied physiognomy. In the first place it may be simple, *i. e.*, involving only the period covered by the attack, whatever the nature of the latter may have been. Epileptic amnesia has the essential characteristic of being total and complete. In certain instances the amnesia may be retrograde, as has been shown by the works of Hughlings Jackson, Falret, Séglas and others. It is possible, also, that this amnesia may partake of the features of the anterograde variety; although this fact is more difficult to establish, owing to the subsequent occurrence of the delirious or hallucinatory form of psychic equivalent sometimes observed after the convulsive seizure or after an attack of *le petit mal* ("Etats crépusculaires").

Periodic amnesia has been described in connection with epilepsy, more particularly by Kellner, Kovalewsky and Maxwell. In this form of amnesia, which is more commonly associated with hysteria, there appears periodically in the course of the individual's normal life, certain psychologic periods having their own proper memories. That is to say, these fragments of abnormal psychologic existence leave no recollections during the intervals, but with the return of this second state, reappears the memory of its former manifestations; the subject thus recalling events which had been forgotten during the normal interval. Such are the facts with regard to hysteria, but the same cannot be said with absolute certainty of epilepsy. In the latter affection, the subject repeats, in the course of the so-called "*état crépusculaire*," the very acts which he executed during a preceding analogous state, but it is exceptional to observe during this phase, a recollection of the events which occurred in the course of previous manifestations.

Finally, in connection with epilepsy, still another form of amnesia has been recently described by Leidesdorf and by Maxwell—the so-called "*retarded amnesia*." According to these authors, the recollection of acts committed during an epileptic state, would persist for a variable length of time and later disappear. The significance, from a medico-legal standpoint, of this assertion, can hardly be overestimated. Under the circumstances, the delinquent, after admitting his guilt, would present an amnesia relative both to his act and to the admissions which followed it. This hypothesis however has not yet obtained widespread recognition. The statement of Brouardel, Magnan and Garnier, that "the epileptic cannot forget that which he has at

some time or other recollected," carries with it considerable weight.

Lastly, the question of the existence of epilepsy without amnesia, deserves brief consideration. The classical notion, so important from the medico-legal standpoint, of "an obligatory amnesia for all acts committed during an epileptic attack," has led in recent years to considerable controversy, especially on the part of Hennocq, Ducosté and Maxwell. Nevertheless, amnesia is the rule after the convulsive seizure, and whenever it is wanting, it behooves to eliminate, in the first place, the diagnosis of hysteria. It is especially in connection with the psychic equivalents and the "états crépusculaires," that the amnesia is more often wanting. Garnier never adopted this view. He maintained that whenever the subject preserves a certain recollection of his attack, we have to do either with an aura of unusual duration, or with an attack of partial epilepsy simulating the genuine affection, or else with a coexistence of the two neuroses: hysteria and epilepsy. He says "Epilepsy without amnesia is no more epilepsy than general paresis without dementia is general paresis." But, a fact of considerable importance in this connection, is the association to a genuine epileptic condition of an alcoholic delirium; so that, acts committed during the latter state may be recollected by a subject presenting, otherwise, distinct epileptic manifestations. The degree of responsibility will evidently not be the same whether the delinquent acts have been committed during an epileptic or during an alcoholic delirium. We may therefore conclude, that in cases of epilepsy the amnesia may be absent, but that in a fair proportion of instances, this absence of amnesia is associated with deliriums or impulses not directly attributable to epilepsy but to some concomitant taint.

HYSTERIA

The amnesia observed in hysteria is of considerable interest. Simple amnesia, says Sollier, "is one of the most common manifestations of the neurosis, but at the same time, one, which is very often and very easily overlooked." This simple amnesia explains, indeed, the peculiarities both in the character and in the acts of hysterics, and especially, the frequent contradictions. As was previously stated in connection with epilepsy, it is by far most commonly in hysteria that periodic amnesia is encountered.

This periodic amnesia concerns facts known under the name or double consciousness, double personality, or vigilambulism. The subject passes alternately from his normal state (*état prime*) into a new state (*état second*). Sometimes the two personalities are absolutely distinct, each possessing no memory whatever regarding the other. At other times, the second personality remembers perfectly both the prime personality and all the previous second states, but the prime subject remembers nothing of these second states, so that in reality, it is the second state which is the more perfect as regards memory. Hysteria, and hysteria alone, is capable of producing this singular phenomenon of intermittent or alternative amnesia.

Finally, it is in hysteria that we observe all those remarkable phenomena grouped under the heading of "partial loss of biologic memory." Certain anaesthesiae, certain systematized paralyses, may be considered as being actual disorders of this memory. The same applies to "astasia-abasia" and to hysterical mutism. Moreover, all possible manifestations of this partial amnesia may be determined in hysterical subjects by hypnotism.

The amnesia which occurs in certain forms of mental disorder, more particularly in connection with mania and melancholia, requires hardly more than a passing mention. In mania, the subject has hardly time to fix in his mind the events which take place during his attack, and we find, on subsequent interrogation, that facts have been observed incompletely and superficially.

In melancholia, the difficulty which the subject manifests as regards both fixation and evocation of events, is the result, before all, of his incapacity to produce the effort necessary to the realization of a sufficient attention on the one hand, and of the association of ideas on the other.

In dementia praecox (Kroepelin) likewise, the impairment of memory is essentially dependent upon a combination of insufficient attention and defective association of ideas.

ORGANIC AMNESIA

The organic disorders of memory are less radical in their clinical expression than are the functional; they partake, very often, of the characters, rather of dysmnnesia than amnesia. Their essential feature is that they are permanent and progressive. The most important considerations in this chapter concern general

paresis. The other diffuse cerebral lesions, the disseminated lesions and the circumscribed or focal lesions, require but a passing notice. Senile dementia, however, presents sufficient interest to merit especial consideration.

In senile dementia, the amnesia develops slowly, without exacerbations unless the process is accelerated by the intercurrent of cerebral hemorrhage or softening. This amnesia, in its evolution, adheres strictly to the law of regression formulated by Ribot. According to this law, the memory of recent events disappears before that of remote events. Later, the latter memories disappear in their turn. Then, notions and ideas gradually vanish, the more complex before the simpler ones, the more abstruse before the more concrete. Sentiments are lost after ideas, and the organic acquisitions are those which persist the longest, as they merely imply automatic activity. The evolution of senile amnesia thus follows the line of least resistance, *i. e.*, of lesser organization.

The amnesia of general paresis is one worthy of especial consideration. It frequently constitutes an initial symptom of the disease and may exist long before any of the other manifestations have appeared; the importance of the phenomenon therefore is very great from the standpoint of early diagnosis. Even in the initial stage of the disease, the actions of the general paretic are very characteristic. Some lose themselves in the street, forget their address; others leave the house without a hat, without a necktie. In conversation, the subject passes from one topic to another without finishing a sentence or fully expressing his idea, or else repeats himself several times. Finally, if asked to write, the patient leaves out certain phrases, omits certain syllables or letters. All these facts show well, that in spite of an apparent state of exaltation, a real deficit has appeared in the individual's memory. The amnesia of general paresis has the two following features: (a) it is general, involving all forms of memories, intellectual and moral, sensory and motor; (b) it is progressive, without ever showing a trace of remission.

In the fully constituted form of the disease, the amnesia is hardly ever difficult to detect, but, as there frequently occurs congestive disorders of the brain, *i. e.*, apoplectic or convulsive attacks, an additional amnesia of different type may be subsequently observed, and in certain instances render diagnosis difficult, or at least lead one into error. In such cases, we have two

distinct amnesiae, one, the primary, which is permanent and progressive, the other, secondarily developed in consequence of a focal lesion, which is transitory and regressive. It must be said moreover, that the latter amnesia can often be differentiated, owing to the fact that it is frequently accompanied by a certain paraphasia involving a loss of memory especially for names and dates. There is a clinical variety of general paresis characterized by periods of remission of variable duration. It is called the intermittent form, and during the periods of remission, all the somatic and psychic disturbances may become attenuated almost to the point of disappearing, but always, there remains the amnesia, as an indelible stigma of organic cerebral disorder. The persistence of this amnesia is of the highest importance, and knowledge of this fact will avoid many serious errors.

In disseminated organic lesions, and more particularly in connection with the multiple foci of hemorrhage and softening associated with vascular changes, *i. e.*, chronic arteritis, diminution of the intellectual capacity occurs early and manifests itself before all by a distinct impairment of memory. Thus, the various infections and intoxications which first gave rise to functional disturbances of this faculty, finally induce, when prolonged, permanent cellular alterations and clinically equally permanent loss of function. Among chronic infections, syphilis holds the first place, and it may be said without hesitation that amnesia is one of the most common and important symptoms of cerebral syphilis.

It is important to differentiate this amnesia of cerebral syphilis from that of general paresis, and the cardinal differential point, says Sollier, is the possible regression of the former under the influence of anti-syphilitic medication. According to Garnier, however, there are two elements, besides the therapeutic test, which are of value in establishing this differentiation.

(a) In cerebral syphilis, the amnesia is not unappreciated by the patient who is himself the first to be aware of his deficiency, he is worried by it and bitterly complains of it. The general paretic, on the contrary, is not conscious of his disorganization which is first noticed by his surroundings.

(b) In syphilis, the blanks in the individual's memory can be filled by the patient efforts of an interlocutor, whereas in general paresis no such result is obtainable.

Of the various forms of chronic intoxication, alcoholism is certainly the most potent in determining an organic amnesia.

This amnesia is progressive like those discussed in the preceding paragraphs; nevertheless, Garnier insisted upon the following features which he regarded as peculiar to the amnesia of chronic alcoholism.

(a) The amnesia involves a period intermediate between remote and recent occurrences. (b) It is irregular and somewhat incoherent in its manifestations; memories which are lost one day reappear the next and vice versa. At times, it is a loss of memory for words which predominates, at other times, for ideas; more frequently however an amnesia for words. (c) Often enough, this amnesia presents all the characters of paramnesia rather than of amnesia proper. This paramnesia consists in the subject's inability to localize correctly with regard to the time and place of their occurrence, events of which he has a distinct recollection; or else, it may be a simple paramnesia of certainty, the subject believing that such or such another event has occurred although he does not feel absolutely certain of it.

Circumscribed lesions of the brain, whether we have to do with hemorrhage, softening, tumor or abscess, may, either directly or indirectly, determine certain disorders of memory. Naturally, if such focal lesions involve the base of the third frontal convolution, the posterior part of the temporal lobe, or the angular gyrus in the left hemisphere, the clinical picture will be that of motor or sensory aphasia, and aphasia, after all, is nothing else but a form of partial amnesia. But aside from this, we know that local processes of various kinds affect, to a greater or lesser degree, memory in general, and modern investigation has shown that focal lesions (tumors, more particularly) act, in great part, through the perilocal nerve-intoxication which they induce.

The third chapter relates to the peculiar disorders of memory classed under the heading of "Illusions of recollection." To this group belong a number of ill-understood phenomena which actually are regarded as examples of paramnesia of certainty. This paramnesia may manifest itself in one of two ways: the subject either is not sure of a fact which has really occurred (*folie du doute*), or, on the contrary, he is certain of a fact which, in reality, has not taken place (illusion of false recognition, illusion de fausse reconnaissance). Unfortunately, in the latter category have been placed a number of phenomena to which perfectly normal individuals are subject, and which consist in having, during a very short period, the impression of living over again

a bit of one's past. The condition has been variously termed: the feeling of the already perceived (*sentiment du déjà éprouvé*), the illusion of the already lived (*illusion du déjà vécu*), etc. The term "illusion of false recognition" should be restricted to the designation of that state in which a subject obstinately maintains the unjustified identity of an individual or object seen for the first time. This phenomenon may indeed be legitimately regarded as a manifestation of intellectual debility. The phenomenon of false recognition is almost always observed in connection with confusional states. It occurs most frequently in hysterical patients, in epileptics, in psychasthenics. It is commonly associated with attacks of vertigo or states of depression, particularly those described by Janet, under the name of "psycholepsie." Moreover, the manifestation is greatly favored by the adjunction of toxic states whether of endogenous or exogenous origin.

The subject-matter of amnesia from a medico-legal standpoint rests almost entirely upon the relations of this amnesia to the state of consciousness. Amnesia presents itself as the expression of the non-participation of the normal personality in the act, and the relationship is intimate enough to serve as a basis for the establishment of responsibility or non-responsibility. In a general way, and making an exception of inebriety so often associated with more or less complete amnesia, we may admit, that there can be no penal responsibility where there is no memory of the act incriminated. The judiciary importance of the disorders of memory concerns not only the accused but the plaintiff also, as he may be unable to furnish the necessary information regarding the crime or delinquency. Even the witnesses must be considered in this connection. In the study of the medico-legal aspect of the disorders of memory, consideration will be given first to the paroxysmal amnesiae; second, to the progressive dysmnesiae; then, the paramnesiae will be briefly discussed and the final chapter devoted to the very important question of simulation.

The paroxysmal amnesiae represent the main group from a medico-legal standpoint, as they include the majority of cases referable to epilepsy, hysteria, alcoholism and traumatism. The simple amnesia of epilepsy is of medico-legal importance only when it involves the period of time covering the act under consideration, be this a sale, a donation, a will, or a delinquency of some kind or other. In order to characterize as simple this

alleged amnesia, the expert must carefully determine its extent. One of the most important data for establishing the onset of the amnesia, is the recollection of the aura, when such recollection exists. It is perhaps more important to determine the exact moment at which the attack ceased, as a subsequent state of psychic equivalence must be considered dependent upon it. In any event, whenever it can be established that the subject is epileptic and that there exists an unquestionable amnesia, the expert must declare the delinquent irresponsible. The existence of simple amnesia reveals indeed the failure of personal participation in the act. In cases of so-called retarded amnesia of epilepsy, the question of establishing the culpability or non-culpability of the individual may be an extremely delicate one. The subject having at first either verbally or objectively admitted his guilt, and later alleged total ignorance of the crime imputed, may well be looked upon as a simulator and be judged with corresponding severity. This phenomenon of retarded amnesia, therefore, although very rare and even uncertain, must not be lost sight of.

In hysteria, the amnesia may have very serious consequences from a medico-legal standpoint. The possibility of a crime or delinquency committed during an alternate state (*état second*) may render judgment extremely difficult if the amnesia is not accompanied by any other somatic phenomenon sufficient for the establishment of the diagnosis. In hysteria, theft is unquestionably the most common mode of delinquency. What characterizes this theft is that the object which has caused sometimes a rigid honesty to waver, is absolutely without value and without usefulness. In the great majority of instances, the individual could have paid for it without even depriving himself.

The amnesia of alcoholics may have a medico-legal significance in cases where delinquent acts have been committed during a state of inebriety. In point of penal responsibility, the accused has right to a very relative indulgence, if amnesia there be, as it is generally admitted that forgetfulness is in direct proportion to the degree of conscious participation at the time the act is committed. In point of civil responsibility it is all otherwise, and the fact that a delinquent alcoholic presents amnesia does not dispense him from paying indemnity in case of damage. In a general way, one should be guided more especially by the circumstances under which intoxication has occurred. The judgment

will naturally differ according as the state of inebriety is an isolated instance or an habitual occurrence, and according as it was accidental or premeditated with the determined purpose of carrying out an act, courage lacking without this artificial excitation, and finally, according as it presents associated with or apart from any incidental syndrome (dipsomania).

The medico-legal interest of traumatic amnesia concerns more frequently the plaintiff perhaps than the accused. This amnesia, indeed, may prevent an individual who has received a blow from giving necessary information or even from pursuing his assailant. Aside from this, the amnesia may, in point of civil right, be the motive of a suit for damages. This consideration has reference especially to anterograde amnesia of fixation or conservation, which may incapacitate the victim for any kind of work during a variable period of time.

Of the progressive dysmnesiae, that which deserves most consideration from a medico-legal standpoint is the amnesia of general paresis. In this condition, one does not always observe an amnesia relative to the act incriminated, but, on the other hand, there is rarely wanting, in the very execution of the act, distinct evidence of an impairment of memory. The subject ignores the real value of things, neglects the precautions necessary to commit the act or to evade justice. Such is the truly characteristic trait of the delinquent acts of the paretic.

The illusions of memory or paramnesiae may now and then acquire considerable medico-legal significance. Instead of being associated simply with confusional states, the phenomenon of so-called "false recognition," for instance, may be the logical sequence, the ultimatum, so to speak, of a systematized delirium or of an obsession. An insane subject, or one simply unbalanced mentally, walking along the streets, meets a stranger whom he believes to be his treacherous rival or the author of his persecutions, may commit acts of violence or bring to bear, otherwise, upon this stranger, the manifestations of his long looked-for vengeance.

The simulation of amnesia represents medico-legally a chapter of the highest importance. The simulation of amnesia may itself be truly symptomatic of a well-defined pathological state; at other times, however, it is nothing else than purposeful deceit. The task of discrimination is frequently surrounded by considerable difficulty. In solving this problem, the following data must

be given due consideration; the conditions of premeditation, the very nature of the act, the means employed in assuring its perpetration, the manifestation for instance, of a strange homicidal frenzy, the precautions taken to ensure the absence of all clue regarding the source of the crime, precipitate flight, the countenance and language at the very moment the delinquent is surprised or seized, his denials and admissions at first, the presence of mind or wandering shown at this critical instant. It is always important to investigate the antecedents, both hereditary and personal. If it is useful to be familiar with the crime in all its details, it is also necessary to know the criminal thoroughly and to establish his complete biology.

In the presence of an accused who alleges amnesia with fraudulent purpose, a number of facts deserve to arouse suspicion.

1. The too opportune occurrence of the lapse of memory.
2. A striking lack of harmony between the behavior of the accused and the attitude which might have presented, either at the time of action, or at the moment of arrest, the individual deprived of consciousness or memory.
3. The lack of conviction in the voice of the subject who pretends not to remember.
4. An unusual, strange and fantastic distribution of the alleged loss of memory.
5. The tardy and clinically unseasonable character of the alleged amnesia, as, for instance, when admissions have already been made.
6. The absence, finally, of a morbid state capable of determining amnesia; amnesia never being ought but a symptom.

Being given that the amnesiae can be divided into two great classes: functional and organic, the expert must direct his investigations, in cases of suspected simulation, along the lines of either of these main groups.

The simulator betrays himself quickly enough in his coarse imitation of the great neuro-psychic manifestations: hysteria and epilepsy, but still more quickly when he attempts to exhibit the physiognomy of a dement or of a general paretic. In the latter case, moreover, the expert's appreciation is no longer merely retrospective, it is direct and actual. The following are the main differential points between the amnesia of general paresis and that of simulation:

- (a) The paretic and the simulator do not defend themselves

in the same way with regard to an act which they have, or pretend to have, forgotten. The paretic hardly denies the act incriminated, but he has forgotten the circumstances which preceded and followed it, he ignores how he came to the place where he committed it and also why he committed it; he becomes confused in giving a lot of silly explanations, without appearing astonished at the situation in which he finds himself and without becoming indignant. The simulator, on the contrary, denies everything; he manifests his astonishment and indignation and protests energetically.

(b) The paretic forgets the hour and place, loses himself in the street, neglects certain details in dress. The simulator, on the contrary, is amnesic only when questioned, he is not in his actions.

(c) The general paretic forgets those events which are the most recent according to the law of regression. Simulation, on the contrary, exhibits amnesia for remote events in accordance with the prejudices of the public.

(d) The paretic when asked to count or calculate, begins most frequently in a perfectly systematic fashion and only after some time does he become confused. The simulator makes mistakes from the very outset in order to establish at once the genuineness of his amnesia.

In a word, the simulator forgets to forget in some instances, in others he exaggerates the amnesia.

LA SALLE ARCHAMBAULT, M. D.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR MAY, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption.....	18	21	18	13	21
Typhoid Fever.....	2	0	0	0	0
Measles.....	0	4	0	0	1
Scarlet Fever.....	1	0	0	0	9
Whooping-cough.....	1	0	0	0	0
Diphtheria and Croup.....	0	3	0	1	1
Grippe.....	1	0	0	2	3
Pneumonia.....	18	10	8	9	8
Broncho-pneumonia.....	3	1	7	4	3

	1904	1905	1906	1907	1908
Bright's Disease.....	16	3	19	13	16
Apoplexy.....	2	8	12	6	7
Cancer.....	7	6	14	5	14
Accidents and Violence.....	13	11	3	10	10
70 years and over.....	25	25	32	26	21
1 year and under.....	13	8	12	9	10
Total deaths.....	144	146	159	131	145
Death rate.....	16.95	16.31	18.71	14.82	16.06
Death rate less non-resi- dents.....	16.00	15.04	16.94	12.67	15.76

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital.....	6	8	11	5	11	9	15	7	6	3
Albany Orphan Asylum....	1	0	1	2	0	0	0	0	0	0
Child's Hospital.....	1	0	2	0	0	0	0	1	0	0
County House.....	5	0	4	0	5	2	2	0	3	1
Home for Aged.....	1	0	0	0	0	0	0	0	0	0
Home for Friendless.....	0	0	3	1	1	0	0	0	0	0
Homeopathic Hospital.....	0	0	0	0	1	1	1	1	2	3
Hospital for Incurables....	0	0	0	0	0	0	0	0	0	2
Little Sisters of the Poor..	1	0	0	0	3	0	1	0	1	0
Public Places.....	0	0	0	0	0	0	3	0	0	1
St. Margaret's House.....	2	0	1	2	0	0	0	0	0	0
St. Peter's Hospital.....	2	0	5	2	3	3	4	1	4	2
St. Frances De Sayles Orphan Asylum.....	0	0	1	0	0	0	0	0	0	0
Convent of our Lady of Angels.....	0	0	0	0	0	0	0	0	0	1
Births at Term.....										78
Marriages.....										0
Still Births.....										6
Premature Births.....										1

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1903	1904	1905	1906	1907	1908
Typhoid fever.....	2	1	1	3	11	5
Scarlet fever.....	13	15	8	19	10	117
Diphtheria and croup.....	23	1	8	18	28	17
Chickenpox.....	19	3	2	0	7	8
Measles.....	168	21	129	3	11	71
Whooping-Cough.....	1	0	0	3	0	0
Consumption.....	2	4	0	3	19	24
Totals.....	228	45	148	49	86	242

Contagious Diseases in Relation to Public Schools.

	Reported		Deaths	
	D.	S. F.	D.	S. F.
Public School No. 1.....	..	1	..	..
Public School No. 2.....	..	1	..	..
Public School No. 4.....	..	2	..	..
Public School No. 5.....	..	3	..	..
Public School No. 6.....	..	5	..	..
Public School No. 7.....	2	1	..	..
Public School No. 8.....	..	3	..	..
Public School No. 9.....	..	1	..	..
Public School No. 10.....	1	1	..	..
Public School No. 11.....	..	5	..	..
Public School No. 13.....	..	1	..	..
Public School No. 14.....	..	2	..	..
Public School No. 15.....	..	4	..	..
Public School No. 16.....	..	1	..	..
Public School No. 17.....	..	2	..	..
Public School No. 20.....	1	1	..	..
Public School No. 21.....	..	3	..	..
Public School No. 22.....	..	2	..	..
High School.....	..	1	..	..
Academy Holy Names.....	..	2	..	..
St. Joseph's Academy.....	..	1	..	..
St. Mary's School.....	..	1	..	..
St. John's School.....	..	6	..	..
St. Patrick's School.....	..	2	..	..

Number of days quarantine for diphtheria:

Longest..... 50 Shortest..... 7 Average..... 21

Number of days quarantine for scarlet fever:

Longest..... 64 Shortest..... 7 Average..... 30 6-93

Fumigations:

Houses..... 141 Rooms..... 347

Cases of diphtheria reported..... 17

Cases of diphtheria in which antitoxin was used..... 17

Cases of diphtheria in which antitoxin was not used..... 0

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were 248 inspections made, of which 156 were old houses and 92 new houses. There were 62 iron drains laid, 34 connections to street sewers, 46 tile drains, 42 cesspools, 1 urinal, 85 wash basins, 67 sinks, 71 bath tubs, 43 wash trays, 1 butler's sink, 8 trap hoppers and 115 tank closets. There were 137 permits issued, of which 100 were for plumbing and 37 were for building purposes. There were 36 plans submitted, of which 13 were of old buildings and 23 of new buildings. There were 15 houses tested on complaint, 9 with blue, or red and 6 with peppermint and there were 20 water tests. 52 houses were examined on complaint and 121 were re-examined. 26 complaints were found to be valid and 26 without cause.

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive.....	2	9	10	27	18
Initial Negative.....	22	15	18	45	86
Release Positive.....	1	12	3	92	77
Release Negative.....	6	4	16	175	78
Failed.....	0	0	0	24	2
Totals.....	31	40	47	363	261
Examination for tuberculosis:					
Initial Positive.....	....	....	....	8	6
Initial Negative.....	....	....	....	10	14

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	20
Factory certificates issued to children.....	8
Children's birth records on file.....	28
Number of written complaints of nuisances.....	112
Privy vaults.....	14
Plumbing.....	18
Other miscellaneous complaints.....	80
Total number of dead animals removed.....	681
Cases assigned to health physicians.....	64
Calls made.....	305

Medical News

Edited by Arthur J. Bedell, M. D.

ASSISTANT SURGEON EXAMINATION.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B street SE., Washington, D. C., Monday, September 14, 1908, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short auto-

biography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000, and surgeons \$2,500 a year. Officers are entitled to furnished quarters for themselves and their families, or, at stations where quarters can not be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month, according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

HOUSE TO HOUSE WAR ON MOSQUITO—FEDERAL FORCES ARRAYED AGAINST IT.—A national campaign against the house fly and mosquito has been planned and is about to be begun by the government bureau of insects. It will cover the entire country, and in its prosecution measures are to be urged by which not only communities but whole states will be enabled to rid themselves of these deadly enemies of mankind.

In order to attain this end it is necessary merely to adopt a few simple and well-understood methods, the application of which may be intrusted to local boards of health. Where the mosquito is concerned, however, it is deemed advisable that there should be a general control by the state, because of the fact that certain species of these tuneless marauders are migratory and liable to appear suddenly in multitudinous swarms in places far from their breeding areas, giving profound discouragement to local efforts toward extermination.

The house fly is strictly local; it never goes far from the place where it was hatched. Furthermore, practically all house flies are bred in stables. Hence it is a simple matter to exterminate them absolutely.

There is no doubt that house flies and mosquitoes transmit germs and that some of them find their way into food and drink, causing sickness.

The extent of infection from this source cannot be exactly known, but the safest way is to keep them out by the use of screen doors and windows screens.

COLLEGE OF MEDICINE—SYRACUSE UNIVERSITY.—The following changes have been made in the faculty and curriculum of the College of Medicine, Syracuse University:

Frank P. Knowlton, A. M., M. D., Associate Professor of Physiology has been made Professor of Physiology.

H. S. Steensland, B. S., M. D., Associate Professor of Pathology and Bacteriology has been made Professor of Pathology and Bacteriology.

H. D. Senior, M. B., F. R. C. S., Associate Professor of Anatomy has been made Professor of Anatomy.

Ernest N. Pattee, M. S., Professor of Chemistry in the College of Liberal Arts, Syracuse University has been made a member of the faculty of the College of Medicine.

Richard H. Hutchings, M. D., Medical Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y., has been appointed Lecturer on Psychiatry.

Ralph R. Fitch, M. D., of Rochester, N. Y., has been appointed Lecturer on Orthopedics.

Charles V. Morrill, A. M., recently Assistant in Zoology in Columbia University, New York, N. Y., has been appointed Lecturer on Histology and Embryology.

Commencing in 1909 students entering the College of Medicine of Syracuse University must have satisfactorily completed one full year, and on and after October, 1910, two full years in a science or arts course in a college recognized by the Regents of the State of New York and in that course and in their preparation for it a competent course in Physics, Chemistry, Latin, one Modern Language and Biology must be included. The equivalent of this requirement, that is, evidence of having passed college examinations for admission to the sophomore or junior class in a recognized college by a student possessed of a medical student certificate from the State Educational Department, will be accepted.

Hereafter all chemistry except applied chemistry will be taught in the new Bowne Chemical Laboratory of the College of Liberal Arts instead of in the College of Medicine as heretofore.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on July 25, 1908, for the following positions: Assistant in Economic Geology, State Museum, \$1,200; Conductor of Farmers' Institutes, \$5 to \$10 a day; Cooking Instructor, with knowledge of basketry, \$480 and maintenance; Engineering Examiner, Civil Service Commission, \$1,000 to \$1,200; Index Clerk, Westchester County Clerk's Office, \$25 a week; Interpreter, Supreme Court, New York County, \$2,500; Keeper, Albany, Erie and Richmond County Jails and Penitentiaries, \$600 to \$900; Leveler, \$4.50 to \$5 a day; State Prison Physician, \$2,000; Reformatory Guard, \$660; Slavonic Interpreter, Kings County Service, \$1,800 to \$2,500; Structural Engineer, State Architect's Office, \$2,000; Watchman, Erie County

Lodging House, \$600; Woman Physician, State Hospitals and Institutions, \$1,000 to \$1,500 and maintenance.

The last day for filing applications for these positions is July 18th.

Full information and application forms for any of these examinations may be obtained by postal card request to the Chief Examiner of the Commission at Albany. Charles S. Fowler, Chief Examiner, Albany, N. Y.

A NEW PRACTICE IN DERMATOLOGY has been published by Ernest Wende of Buffalo and A. C. Cowperthwaite of Chicago.

MEDICAL SOCIETY OF THE COUNTY OF DUTCHESS.—Regular meeting was held Wednesday, July 8th, at the Hudson River State Hospital, Poughkeepsie. Many interesting mental and nervous cases were presented.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN. Semi-annual meeting June 9th and 23d. Dr. E. G. Whipple (A. M. C. '06) of Malone, N. Y., presented a very instructive paper on "The Relative and Absolute Signs of Pulmonary Tuberculosis."

WAX MODELS illustrating the various stages of diphtheria, small-pox and diseases liable to be confused with small-pox have been prepared by the H. K. Mulford Company. These models were on exhibition at the A. M. A. meeting and are now in Philadelphia. They show the action of the antitoxins, vaccines and sera and have been conveniently arranged so that all physicians may see the benefits of such medication.

ALBANY COLLEGE OF PHARMACY.—The College of Pharmacy has issued its catalog for the twenty-seventh session, and will reopen October 5th.

The catalog embodies an outline of the college course with its lecturers and laboratory work, and advice to prospective students on expenses for tuition and living expenses. Students are not required to have drug store experience at entrance although such experience is desirable.

The faculty includes: The Rev. George Alexander, D. D., chancellor ad interim of the university; Willis Gaylord Tucker, M. D., Ph. D., dean, professor of chemistry and toxicology; Alfred Birch Huested, M. D., Ph. G., professor of botany, materia medica, and physiology; Gustavus Michaelis, Ph. G., emeritus professor of pharmacy; Theodore James Bradley, B. S., Ph. G., secretary and adjunct professor of inorganic chemistry and mathematics; Garret Vander Veer Dillenbeck, Ph. G., associate professor of pharmacy; Edwin Cunningham Hutman, Ph. G., director of pharmaceutical laboratory; James Emmett Huested, instructor in materia medica; William Atwood Larkin, Ph. G., instructor in physics and organic chemistry; Spencer Lyman Dawes, M. D., instructor in microscopy and pharmacognosy, and Jared Waterbury Scudder, A. M., instructor in Latin.

PERSONALS—Dr. EDWARD L. HANES (A. M. C., '99) has left Dr. Combs' Sanatorium and started the practice of nervous and mental diseases at 58 Clinton Ave., S., Rochester, N. Y.

—Dr. WM. C. PORTER (A. M. C., '07) has started service in the State hospital at Poughkeepsie.

—Dr. J. HENRY LINDEN (A. M. C., '07) has successfully passed the State hospital examination.

—Dr. CHARLES S. ALLEN, 2ND. (A. M. C., '07) has started practice with his father at Boise, Idaho.

—Dr. ERASTUS CORNING (A. M. C., '07) has started in general practice at 281 State St., Albany.

—Dr. RAY E. SMITH (A. M. C., '08) is practicing in Rutland, Vt.

—Dr. JOSEPH L. BENDELL (A. M. C., '07) has started his work as assistant Pathologist, Bender Laboratory.

—Dr. MARCUS D. CRONIN (A. M. C., '07) is assistant in Pathology and Bacteriology, Bender Laboratory.

—Dr. RICHARD A. LAWRENCE (A. M. C., '07) will on September first, open his office at 13 Ash Grove Place, Albany, for general practice.

—Dr. NORMAN C. GOODWIN (A. M. C., '07) is taking a course in the New York Lying-In hospital.

—Dr. JEROME MEYERS (A. M. C., '07) will sail August 15th for a year of study in Europe.

—Dr. TIFFANY LAWYER (A. M. C., '07) is now Dr. Sampson's assistant.

—Dr. ANDREW MCFARLANE (A. M. C., '87) left July 25th for Japan. He will return early in November.

—Dr. ARTHUR HOLDING (A. M. C., '01) will sail for Europe August 15th to visit London, Paris, Vienna and other cities.

—Dr. WM. C. TREDER (A. M. C., '07) has been appointed assistant in Pathology and Bacteriology, Syracuse University Medical Department. He has taken up his position.

ENGAGEMENT—CHARLES G. DOUW of Poughkeepsie announces the engagement of his sister, Miss Helen Louise Douw to Dr. Herman Vedder Mynderse (A. M. C., '88) of Schenectady, N. Y.

MARRIED—Dr. CHARLES R. MARSH (A. M. C., '03) of Oneonta and Miss Jesse M. Traber of South Valley, N. Y., were married June 23d, 1908.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Modern Clinical Medicine. Diseases of the Nervous System. Edited by ARCHIBALD CHURCH, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence, Northwestern University Medical Department, Chicago, Illinois. An Authorized Translation from "*Die Deutsche Klinik*," under the general editorial supervision of JULIUS L. SALINGER, M. D. With One Hundred and Ninety-five Illustrations in the Text and Five Colored Plates. New York and London: D. Appleton and Company, 1908.

"*Die Deutsche Klinik*" has been published serially in Germany for several years in monographs, each issue consisting of a complete review

of the disease under consideration. This is a favorite custom abroad and permits the easy collection of the literature of general topics, which is not followed in this country. In the volumes of "Modern Clinical Medicine," the American publishers have arranged and collected the different departments, and the present issue is an exhaustive treatise on neurology, under the authorship of the best known writers, among whom may be mentioned Redlich, Quincke, Wernicke, von Leyden, Lazarus, Erb, Schultze, Cassirer, Eichhorst, Edinger, Frankl-Hochwart, Remak, Eulenburg and Ziehen. This list of names is sufficient to attest the credibility of the book, and indicates the comprehensive character of its contents. Among the notable articles are those on Lumbar Puncture, by Quincke; Aphasia, by Wernicke; Tabes Dorsalis, by Erb; Athetosis, Tetany and Thomsen's Disease, by Frankl-Hochwart, and Hysteria, by Ziehen. In the article on Traumatic Neuroses Schuster emphasizes the psychical element in the etiology, and regards certain definitely physical symptoms as complications. "Invalidism and Suicide" are prominent among the complications, and the prognosis as to cure is unfavorable and "if there are claims for damages, no matter of what nature, the prognosis is decidedly more grave." The article on locomotor ataxia is particularly complete, especially as regards treatment, and here is a long list of drugs to be tried for the alleviation of distressing symptoms. In fact the book, as its derivation implies, is decidedly clinical and practical, and may be regarded as the best work upon neurology in the English language since the last edition of Gowers.

Diseases of Infancy and Childhood. Their Dietetic, Hygienic, and Medical Treatment. A Text-book designed for Practitioners and Students in Medicine. By LOUIS FISCHER, M. D., Visiting Physician to the Willard Parker and Riverside Hospitals, of New York City; former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital, etc., etc.; Fellow of the New York Academy of Medicine. With 303 Text illustrations, several in Colors, and Twenty-seven Full-page Half-Tone and Color Plates. 979 Royal Octavo Pages. Extra Cloth, \$6.50, net; Half-morocco, \$8.00, net. *Sold only by subscription.* F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

This is one of the many works on this subject which have appeared during the past twelve months. The author has already written a book on Infant Feeding, which has successfully passed through several editions and perhaps its large sale has inspired him or his publishers to this more pretentious work.

A few quotations from the preface are not amiss in a book review as it gives some insight into the author's manner and method of dealing with his subject:

"Rapid strides have been made in the diagnosis and especially in the

treatment of diseases of children. The Twentieth Century has perfected many dark points in pediatrics. Along the progress in diagnosis, therapeutics has been entirely remodelled. * * * In this work infant feeding in all its phases, maternal nursing, wet nursing and hand feeding, with all the home modifications for bottle feeding are carefully considered and given especial attention. The disorders arising from improper feeding have been given prominence owing to the importance of the subject. Clinical observations in Europe as well as on duty as an attending physician to the large service of the Riverside and Willet Parker Hospitals have given me an abundant opportunity for comparing various methods of treatment."

This book, which contains nearly 1,000 pages is divided into twelve parts and is profusely illustrated, mostly with cuts marked "Original." Part IX is devoted to Diseases of the Nervous System and further subdivided into four chapters. Chapter 3, for instance, is headed "Tetany" and then takes up tetanus; epilepsy; myelitis; spina bifida; spinal paralysis; hydrocephalus; meningocele; encephalocele; cyclops; porencephaly.

There are 161 pages devoted to infant feeding, which is a condensation of the author's former work on this subject. A chemical examination of both mother's and cow's milk is essential at times for intelligent oversight of the baby's food and feeding and it is regrettable that this has only been superficially considered. There are chapters on adulteration of milk, on examination of the "gastric" contents, on urine, and on pathological memoranda, but none on the examination of milk.

To quote again from the preface: "The growing child is very susceptible to infectious diseases, hence this important part has received my most earnest attention." On closer inspection we find that six pages are devoted to German measles; fourteen to measles; thirty to scarlet fever; three to chicken-pox and eighty-two to diphtheria. Of the eighty-two pages on diphtheria, thirty-four are required to discuss intubation.

Erythema infectiosum and Fourth Disease are considered and discussed as one disease, which view is not held by the authors who have made a study of the two diseases.

There is a chapter on "Remedies most frequently administered," with their dosage. That the following drugs taken from the list should be considered under this category in a book on diseases of infants and children, will doubtless cause astonishment: Agaricin, Amylene hydrate, Apiol (undoubtedly for female infants), Chloralamidum, Connia, Exalgin, Ouabaine (Merck cautions that this drug is exceedingly poisonous), Phenocoll, Tetronal, Tolypyrin and Tolysal.

There is a very full and complete index and the book presents a very creditable appearance. The text is readable if one is not too insistent on the use of good grammar. As a book of reference or comparison, this book may be of value, but we should hesitate to recommend it as the only work on Children's Diseases in the library of the medical student or general practitioner.

Treatment of the Diseases of Children. By CHARLES GILMORE KERLEY, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital, etc. Octavo volume of 597 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

This is not a text book for students nor an encyclopedia for specialists, but a practical every-day book for the general practitioner or the cross-roads doctor. The author has not made a compilation of other writers' ideas but in a simple and useful manner shows just what he himself has proved by practical experience to be of value.

The volume is large and well printed, but not unnecessarily bulky. There are about 600 pages. The index of 34 pages is complete and adds greatly to the value of the work. The illustrations are all original and are inserted where it is necessary to illustrate, not to fill up space.

Attention is called to the fact that children vary much more than adults in their mental and physical equipment and that the therapeutic methods of the physician must be flexible and adaptable.

The chapter on Nutrition and Growth is especially valuable. The troublesome question of what, how and when to feed the baby are discussed in a sane, convincing manner. The author advocates giving the breast-fed baby one bottle of cow's milk a day. The advantages are that the feeding is provided for if the mother is taken ill or is called away from home; it gives the mother needed freedom from restraint and enables her to indulge in amusements and recreation and as a result she is able to supply better milk. Diet lists from 12-15 months, 15-18 months, 18-24 months, 2-3d year, 3d to 6th year and after the sixth year form a useful part of this chapter.

The chapter on Constipation in breast-fed and bottle-fed infants and in older children contains some excellent suggestions which will be welcomed by the perplexed physician.

A special chapter treats of instruction for the summer which will be read with profit by all city practitioners.

The author says that therapeutic nihilism, as far as pediatrics is concerned, means ignorance and incompetency. He gives a list of drugs for internal use and external use which forms one of the many distinctive features of the book. The dose of each drug is given separately for 6 months, 18 months, 3 years and 5 years.

The chapter on Gymnastic Therapeutics deserves commendation. This subject is generally overlooked by most physicians and the prosperity of the irregular schools of various cults depends in no small measure on this indifference.

The necessity of a thorough physical examination of the child is emphasized. "The habit of limiting the examination to feeling the pulse, which the doctor usually does not feel on account of the struggling child, and the examination of the tongue, which is usually alike unsuccessful merits the severest condemnation."

Every medical man who is called upon to treat children should have this book by his side for ready reference.

H. L. K. S.

Alcohol, The Sanction for its Use, Scientifically Established and Popularly Expounded by a Physiologist. Translated from the German of Dr. J. STARKE. G. P. Putnam's Sons, N. Y. and London, 1907.

The subtitle of this book of 303 pages indicates in a general way the manner in which the subject is discussed. It must be added, however, that the author finds it necessary to continually impress upon the reader that the "sanction" can only be given when the "use" is "moderate." The belief is expressed that excessive drinking is due "to definite peculiarities and circumstances of the individuals affected who are mentally abnormal or otherwise unfortunate." The predisposition to drunkenness is almost always the result of the need for stupefaction. Mentally sound and happy persons never become drunkards. If one should wish to take issue with the author the first question to be adjudicated must needs be the definition of mental unsoundness, or abnormality. As we are well aware upon no point in psychiatry do authorities differ more widely. The author takes up in detail and discusses the various physiological effects induced by moderate doses of alcohol, showing that in all cases the result is beneficial. The claim is made that the "stimulation" induced by alcohol is a "useful corrective of the modern lack of muscular activity combined as is often the case, with an overwrought nervous system and with a sedentary life." All of this must of course be granted under certain restrictions, but the author fails to record the fact, now fairly well recognized by pharmacologists that the "stimulation" of alcohol in moderate doses is to be ascribed to an inhibition of the general restraining or inhibitory mechanism of the body—the removal of the safety valve which causes the living machine to run regularly and in order. Upon the whole the monograph is a very fair presentation of the subject from the standpoint of the *moderate* use of alcohol. The physiologic discussion is written in terms which the lay reader can readily understand. A bibliography closes the volume.

H. C. JACKSON.

A Text-Book of Practical Gynecology. For Practitioners and Students.

By D. TOD GILLIAM, M.D., Emeritus Professor of Gynecology in Starling-Ohio Medical College, and Sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, Ohio; Fellow of the American Association of Obstetricians and Gynecologists; Member of the American Medical Association, of the Ninth International Medical Congress, etc. Second, Revised Edition. Illustrated with 350 Engravings, a Colored Frontispiece, and 13 Full-page Half-Tone Plates. 642 Royal Octavo Pages. Extra Cloth, \$4.50, net; Half-morocco, Gilt-top, \$6.00, net. Sold only by Subscription. F. A. Davis Company, Publishers, 1914-16 Cherry street, Philadelphia,

The purpose of the work, as expressed by the author in the preface of the first edition, is to make the book plain and practical for the student and busy practitioner.

In the preface to the present edition the writer states that he has endeavored to preserve the plan and arrangement of the work as it first appeared, with as little alteration as possible, and to add such matter as would increase its value without materially adding to its bulk. "The changes, for the most part, have been confined to technics, as there have been few changes along other lines such as would be taken cognizance of in a work of this scope and character." For ready reference, and as an aid to the student and busy practitioner a regional index of symptoms has been appended.

Most of the work of revision has been done by his son, Dr. E. M. Gilliam. To those who are familiar with the first edition, the second one should not need any further introduction.

In the present volume the writer has presented what he believes the student and busy practitioner should know about the diseases of women. The scope and size of the work, of necessity, limits the fuller treatment of the various subjects in gynecology and disarms any criticism along these lines. As in other works of its class its chief value lies in the presentation of methods of diagnosis and treatment, which, from practical experience, the author has proved to have been of value to him.

In the style of the book, *i.e.* a "plain connected narrative," the writer has presented the medical profession with a very readable work.

J. A. S.

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Edited by Miss Ada Bunnell, B. L. S.

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TUBERCULOSIS

Edited by Arthur T. Laird, M. D.

The Day Camp Sanatorium at Mattapan.

WALTER E. KREUSE. *Charities*, 1907, XIX, 1295.

There is a growing feeling among physicians and social workers that except for acute and dangerously infectious diseases there must be more treatment in the home and recognition of the economic impossibility of more general dependence on hospitals.

The Day Camp started by the Boston Association three years ago after German precedents has had two successful seasons. Located first at Parker Hill, it has been removed to Conner's Estate in Mattapan. The Boston City trustees are now planning to spend six thousand dollars for building and equipping a camp for one hundred patients, to be ready February, 1908. The Camp opened for the season of 1907 with fourteen patients, within a month a waiting list was necessary. The idea was to admit applicants that could not be placed elsewhere and to strive for success by giving good food and rest in the open air, with medical and nursing attention and supervision of home conditions. No one was admitted except patients rejected by the examining board of the Rutland State Sanitarium, and patients of the advanced but still hopeful class.

Nor was any one admitted with a regular temperature of over 101, or who would lose more in fatigue of getting to the Camp than he would gain by being there. Car riding was found not to induce coughing.

The day's routine may be of interest: The patients arrive at Camp 8.45 A. M. After a short rest the pulse and temperature are taken. At 9.30—10 A. M. lunch is served, consisting of bread, butter and milk, or eggs in certain cases.

At noon, dinner is served and consists of meat, fish, vegetables and desserts made of milk and eggs. The dinner is given out to the patients as they file from the wash stand, by the kitchen, to the dining tent.

The pulse and temperature are again taken before the afternoon lunch at 4 P. M.

The patients are expected to have a good breakfast and supper at home.

Hot milk and hot chocolate are served on cool days.

The weight is recorded once a week.

Thorough chest examinations are made once a month.

The throat is examined by a specialist who comes to the Camp twice a week to give treatments.

There is a reclining chair for each patient and there are several hammocks.

Two rest tents are provided, each with two cots, for emergency. Any patient with a temperature of over 100 is immediately sent to bed. Newspapers, books and magazines are provided. Sewing and some work is provided, in limited amounts.

Smoking and games (cards, checkers and dominoes) are allowed certain patients.

The sexes segregate themselves, naturally.

Daily attendance is required, occasionally permission for Sabbath celebration is given. On one day's absence, without excuse, a nurse, of the Association, makes a visit to investigate. Three days' absence forfeits the place. Patients thus discharged are referred to the Out-Patient Department of the Boston Consumptives Hospital for observation. Careless patients may be sent to Long Island or Tewksbury to be under quarantine.

Graduate nurses are sent to the homes, when the patients are admitted, and later make visit to determine how faithfully the cure is being carried out. They help to remove prejudice.

The daily average attendance was seventy, and 11,000 days' treatment were given this year, an increase of 30% over the previous year.

The cost was 58 cents per patient per day (82.7 cents first season).

Nearly two-thirds of the patients had previously been treated in sanatoriums, hospitals or classes.

On the whole the clinical results were satisfactory and 122 patients gained in weight.

(For detailed Statistics see article on the same subject "Mattapan Day Camp," by Dr. Townsend, *Boston Medical and Surgical Journal*, 1908, clviii, 246, February 20.)

The Relation of Micro-organisms to Hemorrhage in Tuberculosis. Third Annual Report of the Henry Phipps Institute, Philadelphia, 1907. The bacteriological work which forms the basis of this article was done by Drs. M. P. RAVENEL and J. W. IRWIN; the tabulation, analysis review by Dr. LAWRENCE F. FLICK.

During the year 1905 a study was begun of the cause of hemorrhage in tuberculosis. Reasoning from the standpoint of epidemicity of hemorrhages there were two possible hypotheses: first that hemorrhage might be due to barometric conditions; and secondly that it might be due to micro-organisms. The micro-organismic hypothesis seemed the more plausible of the two, hence it was decided to try it first. Of the micro-organisms, the one which by reason of our knowledge might be most justly accused of producing hemorrhages was the pneumococcus, inasmuch as true pneumonia is frequently accompanied by oozing of blood. It was therefore decided to first look for the pneumococcus as the cause of hemorrhages. Unwashed sputum, washed sputum, bloodstreaked sputum, and expectorated blood of patients with hemorrhage were studied. Post-mortem studies were also made in a few cases.

Results of staining and inoculation of unwashed non-hemorrhagic sputum.

In the stained specimens the pneumococcus was found once in thirteen cases. No record was kept as to the occurrence of streptococci. In all of them the sputum was injected into mice and in three cases the pneumococcus was recovered from the mouse's blood.

Results of the inoculation of mice with non-hemorrhagic sputum washed with sterile salt solution.

In only two of the twelve cases was the pneumococcus recovered from the mice.

Results of staining, culture and inoculation of blood streaked sputum.

The pneumococcus was found in thirteen out of twenty cases. Complete records as to the occurrence of other organisms were not preserved. Inoculations of mice were made in eleven cases. In six the pneumococcus was obtained, in another, the streptococcus and pseudo-diphtheria bacillus.

Results of staining, inoculation and culture of a definite hemorrhage.

Sixteen cases were studied. The pneumococcus was found in ten out of fifteen. The streptococcus in ten out of fifteen also mice were inoculated in six cases. The pneumococcus was recovered once. Two rabbits were inoculated and the pneumococcus recovered from one of them.

Eight of the cases studied, came to autopsy. Of the six hemorrhagic cases, the pneumococcus was recovered from the lung cavity in three and from the kidney in one. The pneumococcus was not found in the non-hemorrhagic cases postmortem. The streptococcus and the pseudo-diphtheria bacillus were each recovered at autopsy one half (three) of the hemorrhagic cases autopsied.

No conclusion were drawn. The pseudodiphtheria bacillus and the streptococcus evidently occurred in the hemorrhagic cases at least as frequently as the pneumococcus.

PHYSIOLOGICAL CHEMISTRY

Edited by Holmes C. Jackson, Ph. D.,

The Treatment of Pancreatic Fistula and the Mechanism of the Pancreatic Secretion During Digestion. (Zur Therapie der Pankreasfistel nebst Bemerkungen ueber den Mechanismus der Pankreassecretion während der Verdauung.)

WOLGEMUTH. *Berliner klinische Wochenschrift*, No. 8, 1908, pp. 389-393.

The author refers to a previous article which appeared in this journal (No. 2) in 1907 in which he reported the investigations made upon a case of pancreatic fistula. It proved that the pancreatic secretion depends upon the nature of the diet as described by Pawlow in dogs, the secretion being increased by carbohydrate, decreased by protein and checked by fat diet. Hydrochloric acid was found to increase and sodium bicarbonate to decrease the secretion.

On the assumption that the fluid secreted from the pancreas was the cause of the slow healing of the pancreatic fistula, in the case studied, the author put the patient on a strict anti-diabetic diet and gave sodium bicarbonate to diminish the secretion still further. Under this treatment, the secretion through the fistula diminished and the wound healed in a relatively short time.

These three foods—carbohydrate, protein and fat, influence the pancreatic secretion in the same way that they do the gastric secretion so by increasing the gastric secretion the hydrochloric acid increases the pancreatic secretion. The author calls this the indirect action in contradistinction to the direct action which is dependent upon the chemical constituents of the food.

In considering the indirect effect, the question arises as to how the HCl influences the pancreatic secretion. Pawlow believed its action to be reflex. During the past year Wertheimer and Lepage found that if HCl (five parts in a thousand) was introduced into the duodenum or jejunum of dogs, the pancreatic secretion began at once and was not affected by anaesthetics,—atropine. Pawlow on the other hand found that atropine given subcutaneously to a dog during digestion (2 centigrams per kilo) checked the pancreatic secretion. In this experiment the atropine stopped the peristalsis whereby the acid gastric juice was prevented from reaching the pancreas and so ceased to stimulate the pancreas to secretion. In the experiment of Wertheimer and Lepage the HCl being in the duodenum, acted upon the pancreas even though the excitability of the secretory nerves was diminished by atropine.

This, however, does not explain the action of HCl on the pancreas. Bayliss and Starling have proved that after cutting the vagus, the splanchnics and extirpation of the solar plexus, the injection of HCl (30-50cc four per cent. HCl) into the duodenum or jejunum produced an increased secretion from the pancreas. The same result was obtained when the intestinal loop was separated completely from the body, the blood supply alone remaining intact. The stimulating action must be due to some substance reaching the pancreas through the blood stream.

Wertheimer and Lepage in previous experiments showed that HCl as such injected into the blood did not stimulate the secretion.

Bayliss and Starling were able to produce a substance which caused active secretion, by allowing HCl to act upon the mucosa of the jejunum and the duodenum which they called secretin and which did not act as a ferment for it withstood the action of heat.

The substance in the mucosa which reacts with the HCl is known as prosecretin and is believed by them to be found only in the duodenum and jejunum. The action of secretin in dogs is not affected by fasting or digestion, high or low blood pressure or atropine. Secretin also increases the flow of bile and diminishes the blood pressure but this is due to a substance other than secretin which may be separated from it by the action of alcohol on the intestinal mucosa.

Enriquez and Hallion, in studying secretin, found that its action was through the blood, in this way—after HCl had been injected into the intestine and the secretion had commenced blood was withdrawn from the carotid and injected into the jugular vein of another animal causing an immediate secretion from the pancreas. The effect of the blood injected varied in intensity with the vessel chosen being more marked in the vessels leading directly to the pancreas.

Popielski was successful in producing an extract in every way similar to secretin from the mucosa of the ileum, rectum and stomach with HCl.

More recently Fleig has elaborated the reflex theory of Pawlow and believes it to be of more importance than the action of secretin. He was able to show the reflex action by removing an intestinal loop of a dog and ligating the thoracic duct and blood vessels but keeping the nerves intact. By introducing HCl, boracic acid and carbonic acid into the loop a secretion from the pancreas was produced although boracic and carbonic acids do not form secretins.

There are then two stimuli to pancreatic secretion brought into action by the acid gastric juice entering the intestine; the reflex, caused by the action of HCl as such upon the centripetal nerve filaments of the intestine; and the secretin acting through the blood stream.

There are certain constituents of the diet which act in a direct way upon the secretion from the pancreas, first of all fat. Fat inhibits gastric digestion and stimulates pancreatic digestion. Its action on the pancreas is reflex. The alkali soaps, however, react with the duodenal and jejunal mucosa to form a substance similar to secretin and named sapocrinin which acts through the blood stream in the same manner as secretin and at the same time increases the lymph and lowers the blood pressure. Furthermore the sapocrinin has no reflex action but affects apparently the secretory tissue of the pancreas. The fat stimulates reflexly; the alkali soaps by the formation of sapocrinin.

Carbohydrates and protein exert no direct action on the pancreatic secretion but albumoses and peptones have a weak stimulant action intravenously injected independent of any lowering of the blood pressure.

Acetic acid and lactic acid change prosecretin to secretin but they also act reflexly like HCl.

Alcohol forms with the mucosa of the duodenum, jejunum and to a lesser extent with the stomach and ileum a substance analogous to sapocrinin known as aethelocrinin.

Finally to be considered is the psychical influence. Pawlow proved that the pancreatic secretion began two or three minutes after food was taken, before in fact the gastric digestion began. The secretion may be inhibited psychically.

Arranged in their order of importance, the three factors influencing pancreatic secretion are (1) psychic, (2) the direct action of chemical constituents of the diet, (3) indirect action of the acid chyme entering the intestine.

The author believes that these facts add considerably to our therapy of diseases of the pancreas. In trauma and certain surgical conditions the secretion may be diminished while with insufficient gastric digestion or obstruction to the duct of Wirsung by tumor or calculus the pancreatic secretion may be increased.

H. W. CAREY.

A New Method of Estimating Pepsin and its Clinical Use. (Ueber eine neue Methode der quantitativen Pepsin bestimmung und ihre Klinische verwendung.)

SOLMS. *Zeitschrift für klinische Medizin*, Bd LXIV, Heft 1-2, pp. 159-168.

The principle of the method here suggested depends upon the fact that Ricin added to a one per cent. saline solution forms a cloudy mixture due to the relative insolubility of the albuminous bodies in the toxine, which becomes clear only when pepsin is added.

The technique of the method is as follows: The stomach contents are removed one hour after an Ewald-Boas test breakfast and tested for free hydrochloric acid, total acidity and lactic acid. The gastric juice is then diluted with distilled water—1:100 to 1:1000 in normal cases. 1:10 to 1:100 in cases of sub-acidity and 1:100—1:10,000 in cases of hyperacidity.

Into each of five test tubes 2 cc. of filtered Ricin solution are introduced and .5 cc. $\frac{N}{10}$ HCl added to each making the solution cloudy. Into the first test tube 1 cc. of cooked gastric juice is added, into the second, .9 cc., the third .8 cc., the fourth .5 and the fifth 0.0 cc. Then the fresh gastric juice diluted 1:100 with distilled water is added to first tube, 0. cc. (control); second 0.1 cc.; third, 0.2 cc.; fourth, 0.5 cc.; fifth, 1cc. Each tube now contains 3.5 cc. fluid, is corked and put in the incubator. At the end of three hours the tubes are removed and it is seen in what dilution of the active pepsin a clear solution has resulted.

By experiment the author found that with normal acidity of 40-60, 1 cc. of a 1:100 solution of pepsin would render the Ricin mixture clear in three hours. This is the unit of measurement, or 100 pepsin units.

The stomach contents of the basis of acidity are divided into normal,

40-60+FHCl, almost normal 30-40 or 60-70+FHCl, sub-acidity 32-34 FHCl, and hyperacidity 70+HCl.

In a series of 12 cases with normal acidity the pepsin content measured from 100 to 200 units and a similar result was obtained in 12 almost normal cases.

In 20 cases of sub- and anacidity the pepsin content measured between 10 and 20 units.

Finally in a series of 13 cases of hyperacidity a proportionate increase in the pepsin content was not demonstrable, it being in all but two cases between 100 and 200.

In general these results show that in sub- and anacidity there is also a marked reduction in the pepsin formation, but in hyperacidity there is not a proportionate increase.

In conclusion the author states that this method does not throw any additional light on the diagnosis or therapy of gastric diseases, but that it is simpler to carry out than the methods of Mett, Nierstein and Schiff and Volhard.

The Ricin mixture is made by adding .5 g Ricin to 50 cc. salt sol. and filtered. The filtrate already cloudy is rendered milky by the addition of .5 cc. $\frac{N}{10}$ hydrochloric acid sol.

H. W. CAREY.

ALBANY MEDICAL ANNALS

Original Communications

THE REPORT OF THE TROY TUBERCULOSIS CLASS

By HARRY W. CAREY, M. D.

Troy, N. Y.

(Physician in Charge)

THE TUBERCULOSIS CLASS METHOD

To care for, to relieve and cure consumptive people in their own homes is the most important step in the solution of the tuberculosis problem, for the people afflicted with this disease who must by force of circumstances remain at home, number ninety-five per cent. of all cases. It is in the home therefore that the lesson of fresh air, cleanliness and sunshine must be taught. The home care of consumptives has been practiced for some years with somewhat indifferent results due to the want of two essentials necessary to success, discipline and close supervision.

The "Class Method" was first put into practical use by Dr. Joseph H. Pratt in the out-patient department of the Massachusetts General Hospital in Boston, although the idea originated with Dr. C. H. Minor of Asheville, N. C. It differs from the dispensary in that it gives a large amount of attention and care to a small number of patients in their homes, while the dispensary gives a relatively small amount of attention to a large number of patients at the dispensary. It is advisable therefore as Dr. Pratt points out that the class should be limited in number to twenty-five. If a larger number of patients than this are to be cared for another class should be formed.

The members of the class form the patients of a sanatorium, the building is the home of the patient where the same rules and regulations of rest out of doors, diet and records are carried out as in a sanatorium. The patients are visited daily by the nurse and once a week they assemble for examination and treatment by the physician in charge.

ORIGIN OF THE SOCIETY

The Troy Tuberculosis Class was started in May 1907 as a result of a visit to Boston where the writer had the opportunity of observing the work being done there in the Emmanuel Church Tuberculosis Class. At that time no organized effort had been made in Troy to treat and educate consumptive people in the sanitary measures necessary for their recovery and for the protection of those with whom they were in contact.

The first step in organizing was to interest a few men in the subject of tuberculosis and to explain to them the need of some concerted effort to bring recovery within the reach of the working people. It was pointed out that as matters then stood a working man or woman if taken sick with consumption had no alternative but to remain at work as long as he had the strength and then to accept the inevitable result. It was necessary to interview only six men so responsive were they to the proposed plan, and they at once formed the Society for the Home Treatment of Consumption in Troy. In order to carry out the work funds were needed and the following circular was sent out and met with a ready response so that by June 1, 1907 enough money was at hand to begin work.

THE SOCIETY FOR THE HOME TREATMENT OF CONSUMPTION IN TROY

There has been, during the last few years, a great revival of interest both among physicians and business men in the question of consumption. Everyone is coming to realize that this plague is the most dangerous of any that we have to contend with.

It kills, every year, more people than any other disease. Last year there were 240 deaths from consumption in Troy, an average of 20 each month. The great majority of the deaths were among the poor between the ages of 20 and 40 years, the time of life when men and women are most essential to the support of their families and care of their children. They cannot go away or receive the benefits of treatment in a sanatorium, therefore, they must be cared for at home.

In many cities of the United States measures have been taken to fight this disease and the results have been remarkable. We are going to fight consumption in Troy and we ask for your interest and assistance.

A class is to be formed of consumptives who cannot afford to leave home to go to a sanatorium or to pay for continuous medical care. The Society has secured the voluntary services of Dr. H. W. Carey as physician-in-charge, and Dr. H. C. Gordinier and Dr. J. B. Harvie as consultants.

The class will be under the care of the physician and a nurse who will instruct the patients in the three essentials for recovery—

Rest, Living Out of Doors and Proper Food

The class meets once each week for examination by the physician and each member is visited at the home by the nurse, who will see that the instructions are properly carried out. This is the method used so successfully in Boston, Providence and New York, where, in most instances, the progress of the disease has been arrested, in many instances cured.

The cost of maintaining the class is \$50 a patient per year, the expenditure being limited strictly to the purchase of tents, cot-beds and reclining chairs to enable the patient to live comfortably out of doors and to pay for the services of the nurse. In order to meet the expenses of carrying on the work for a year we must have \$1,000 in hand and we ask your aid by a contribution of \$10.

PLAN

The original plan was to receive for membership in the Class only incipient cases, patients in whom the disease had just begun and in whom it was causing few symptoms. Cases of this type are most favorable for curé, and so by confining our efforts to the incipient cases we would be in a position to do the greatest amount of good to the greatest number.

This limitation of membership however was almost at once found impracticable for two reasons. First, that it proved somewhat difficult to get any patients at all and second, that to all intents and purposes there were no incipient cases. The first difficulty will be readily understood if we consider that the idea of living out of doors and attempting to relieve any disease without medicine was a new one and directly in opposition to the popular teachings. The second reason is explained by the fact that in its inception consumption rarely causes an individual to seek the services of a physician. Consequently it is only exceptionally that the disease can be detected in its incipency. So instead of limiting the membership to incipients it was decided to take for treatment any person with tuberculosis of the lungs provided—First, that they are unable to afford continuous medical attendance from a private physician. Second, that they give up work. Third, that they promise to follow the rules of treatment adopted for the class. The total membership in the class was limited to ten, in order to keep within the funds on hand.

HOW THE CLASS IS CONDUCTED

When a patient first applies for admission the history is taken in detail. The family history, past history, present illness, financial condition, occupation, home life, and what is done with the sputum are carefully inquired into, as shown by the questions on the chart here given.

To determine exactly the patient's condition a thorough physical examination is made, the condition of the throat determined and the sputum examined. When the sputum examination is negative a positive tuberculin reaction is required before a positive diagnosis is made.

When the diagnosis of tuberculosis is made and the status presens is exactly determined, the patient is told truthfully just where he stands, what his chances of recovery are, and what he has got to do to get well. The truth is often a hard thing to tell to a patient but it is absolutely essential to the successful treatment of a consumptive and the patient very quickly understands that he is being dealt with squarely. It should always be borne in mind that we are treating the individual rather than the disease. No possible good can come by telling a patient that he has "a spot on his lungs," or that he is "threatened with consumption." He has consumption or he has not. That is what he comes to find out, and as soon as it is possible to give a positive opinion it should be given, modified but not altered, by as much tact as it is possible to command. The diagnosis made and the probable chances for arresting the advance of the disease or its absolute cure determined, the patient is told that there are two things for him to work for. To get well himself and not to give his disease to others.

HOW TO PROTECT OTHERS

It is explained to the patient that the material expelled by coughing, the sputum—is the chief source of infection, although infection may be transmitted by sneezing, kissing or from articles used by the patient, such as drinking glasses and eating utensils.

The following rules are laid down governing these points:

1. Collect the sputum in a paper spit cup. Use the cup one day then burn it at night and put in a new filler.
2. Away from home collect the sputum in a paper napkin, place the napkin in a paper bag in the pocket and burn on return to your home.

TROY TUBERCULOSIS RELIEF STATION*

History Sheet

No.	Age	Dr.
Date	Nationality	
Name	How long in city	
Address	floor	Benefit
Occupation	Sputum.	
Preliminary Diagnosis		
Final Diagnosis		
F. H.	F.	M. S. B
Contact Family Boarders Work		
P. H.	Measles	Scarlet Fever Pertussis Bronchitis Typhoid
	Pleurisy	Pneumonia Influenza Fistula Rheumatism
	Tobacco	Alcohol
P. I.	Onset date	Cause
	Initial Symptom	Present Complaint
	Weight, top	normal now Height
	Appetite	Digestion Bowels Sleep
	Fever	Chills Sweats Weakness
	Cough	Expectoration, amt. Dyspnoea
	Haemoptysis	Date Pain
		Amount
Remarks		

*The original charts are 8½ x 10 inches and spaced accordingly.

TROY TUBERCULOSIS RELIEF STATION*

Physical Examination

Name	History No.			
------	-------------	--	--	--

Anaemic	Tongue	Gums	Teeth	Fingers
---------	--------	------	-------	---------

Thorax — Shape	Symmetry
----------------	----------

Expansion	V. F.
-----------	-------

Notes:—

Temperature

Pulse	Volume	Tension	Vessels
-------	--------	---------	---------

Heart—	P. M. I.	R. C. D.
--------	----------	----------

Sounds

Abdomen

Glands

Bones

Testicles

Menstruation

*The original charts are $8\frac{1}{2}$ x 10 inches and spaced accordingly.

3. When coughing or sneezing hold a paper napkin before your mouth.

4. Have your own drinking glass, knife, fork and spoon. Do not use public drinking cups.

5. Do not kiss others.

6. Do not wear a beard or mustache.

The reasons for doing these things are carefully explained to each patient and frequently repeated. The explanation is made as clear as possible, for unless the patient understands *why*, he is very likely to give little heed to the rules. The rules are not printed and given to the patients, for printed instructions we believe are not productive of as good results as frequent repetition by word of mouth.

HOW TO GET WELL

The essentials to recovery are:

Living out of doors.

Plenty of good food.

Rest.

Determination.

Living out of doors.—This means living out of doors in comfort. There are several ways of doing this.

1. Tents.—When the yard is suitable the tent is placed there. The Society furnishes the tent when the patient is unable to buy one. The tents used are 7 x 7 wall tents with a wooden floor raised 6 to 12 inches from the ground. The tents are furnished with a couch bed and steamer chair. When the yard is not suitable the tent can be placed on the roof if it is flat.

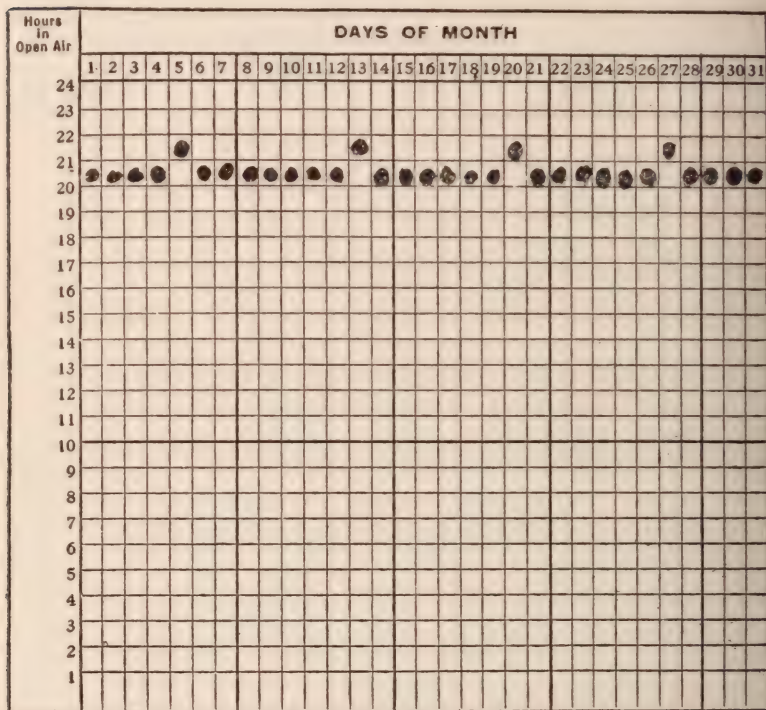
2. Porches.—Utilizing a porch already on the house. When there is no porch the Society builds one. These porches are built as temporary structures and are placed on the side of the house most protected on the first or second story.

3. Window tents.—These are made of canvas and extend over the bed, the outlet is the open window. Sleeping in a window tent a patient is continuously breathing the fresh air. This is the least desirable of any of the methods of sleeping in the fresh air and is distinctly a compromise. It is used only when a tent or porch is not practicable.

Living out of doors is practiced day and night, summer and winter. For one not accustomed to being much out of doors, it is desirable to begin gradually and in the warm weather if

possible. A cold sponge bath in the morning on arising is very invigorating and assists in hardening the patient against cold. At first patients remain out during the day for a short time and if the weather is warm they very soon can sleep out of doors. In winter it requires longer to become used to the cold air, but even so patients can begin sleeping out as soon as they understand how to protect themselves from the cold.

One difficulty in keeping warm out of doors in winter is that



Specimen Out of Door Chart from Patient's Record Book.

few realize that it is necessary to be as warmly protected from below as from above. For this purpose a blanket of newspapers sewed together to a thickness of one inch is placed beneath the mattress and makes a very excellent barrier to the penetration of the cold from below. For the outside covering above a heavy horse blanket is furnished which is not only very warm but also water proof. Patients are advised not to remain out when it is very wet weather.

To Illustrate Dr. Carey's "Report of the Troy Tuberculosis Class."

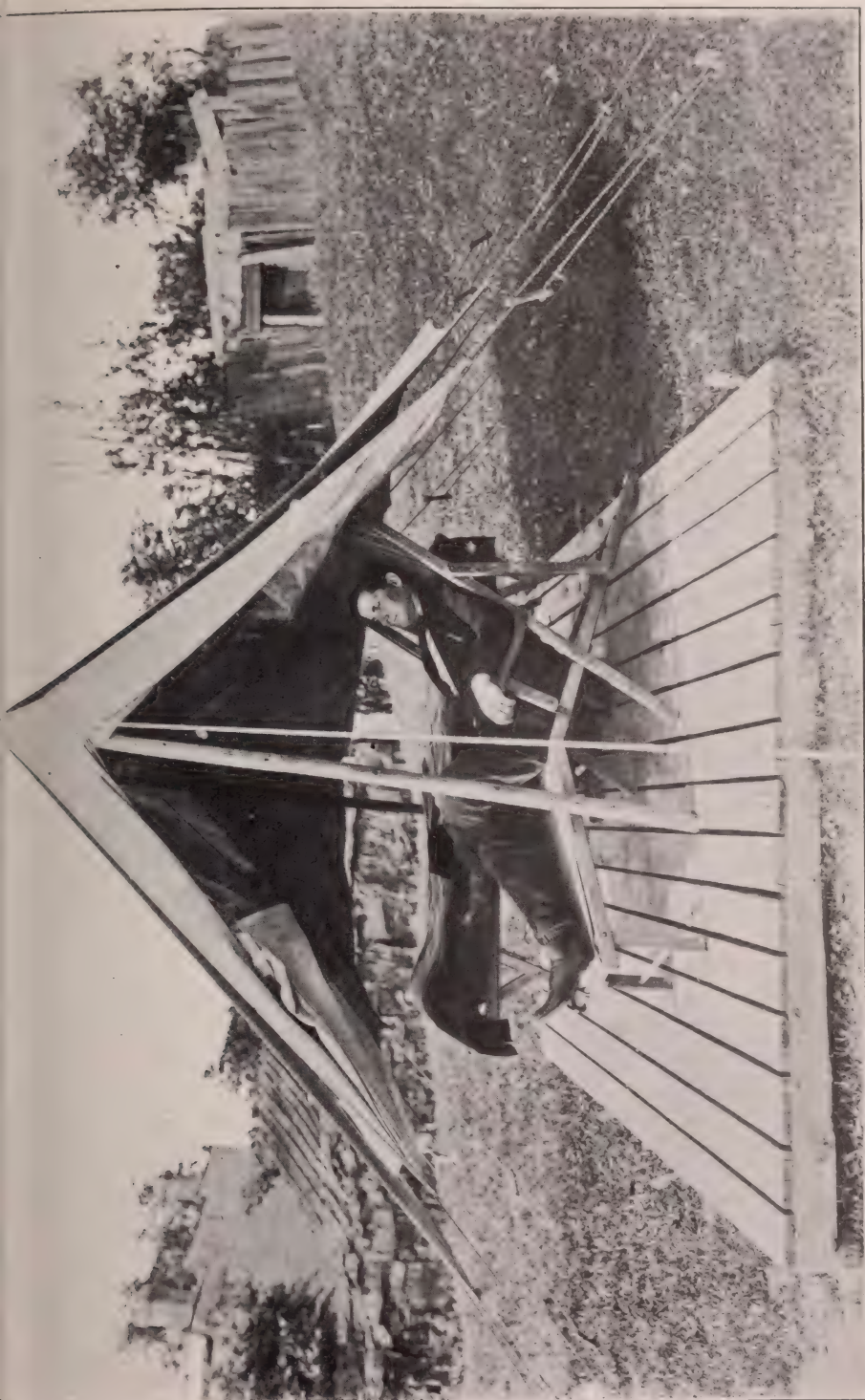
Albany Medical Annals, September, 1908



Taking cure under difficulties in winter.

To Illustrate Dr. Carey's "Report of the Troy Tuberculosis Class."

Albany Medical Annals, September, 1908



The same patient taking cure in tent. The walls of the tent should always be up in pleasant weather

Tents are not suited for out of door life in the winter, porches only are used. If there is no porch a window tent is used or the windows of the sleeping room are removed.

The object in having the patients out of doors is to make every breath one of fresh air whether warm or cold.

Some of the patients have remained out of doors 22 or 23 hours every day since their admission in the fall. Without exception once the patient sleeps out he continues to do so because he begins to feel more comfortable at once. Coughs and colds are more infrequent when the patients are sleeping out, in fact they seem to acquire an immunity to taking cold.

Food

In tuberculosis more food is required to equalize the waste than in health. The patients are required to take two quarts of milk and three raw eggs and three tablespoonfuls of olive oil per day in addition to their regular meals. This extra food is given as medicine to be taken without regard for the appetite or desire for it. The milk is taken a glass at a time with and between meals at stated intervals in order not to overwork the digestive organs. The eggs are generally taken raw and whole in the milk between meals. The oil is taken at meal time and can be taken in the form of a dressing on salad, or may be flavored with a little vinegar or lemon juice. Usually the patients prefer to take it unflavored. The amount and variety of this extra diet is often modified to meet the individual case. The end in view in giving so much extra food is to bring the weight slightly above the normal and maintain it there.

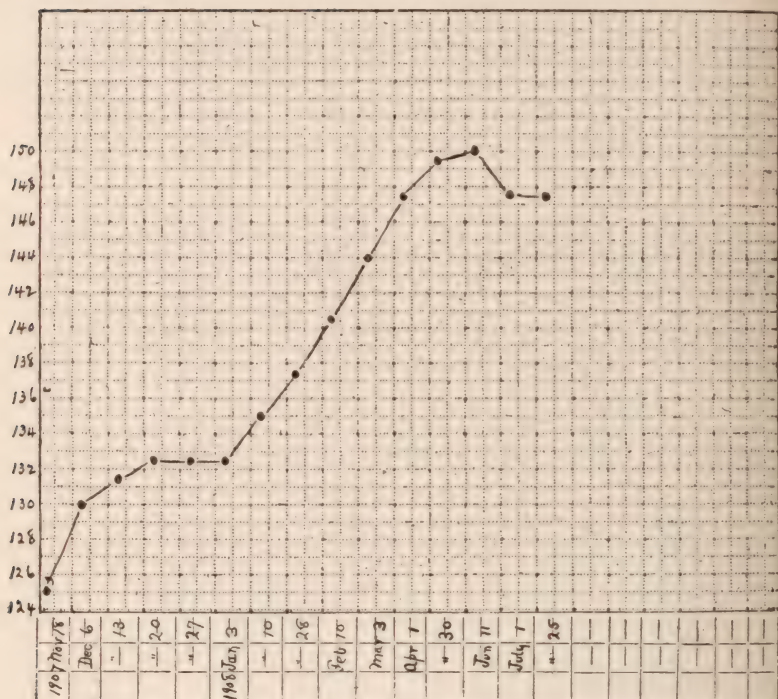
REST

This means mental as well as physical rest and always in the open air. It is a very cheerless prospect to the patient, particularly if we are dealing with one that has been active. To sit still without exercise, week after week, month after month, sometimes seems almost beyond endurance, yet it is often surprising how quickly one becomes accustomed to it, and the interest is soon aroused in the little events going on round about out of doors. Visitors are numerous, the patient always becomes a center of interest to his neighbors. The object of the Rest is not to isolate the patient but to keep the lungs as near at rest as possible. Patients soon understand that exercise puts hard work on the lungs, which is harmful, particularly in the active stage of the disease.

THE TROY TUBERCULOSIS CLASS

No.

Name



Specimen weight chart, showing the rapid gain following out-of-door life.

The rules adopted regulating exercise are as follows:

1. No exercise is allowed during the first two weeks of treatment.
2. No exercise if during the week the temperature reaches 99 degrees or more.
3. No exercise if the pulse rate reaches 100 or more.
4. No exercise if there have been any complications such as hemorrhage, streaked sputum or pleurisy.
5. Exercise is allowed if the temperature and pulse rate is normal for three weeks, and there have been no complications.

6. Exercise is to be taken by the watch beginning at fifteen minutes, morning and afternoon. The effect is noted by the temperature and pulse rate fifteen minutes afterward.

The period of exercise is gradually increased, governed by the effect upon the patient.

DETERMINATION

It is self-evident that it takes determination to carry out this treatment. There are three factors that are of much assistance in helping the patients to keep up the fight.

1. A firm belief that they are doing the best thing for themselves.

2. The desire to get well.

3. The optimism which generally prevails among tuberculosis patients.

Many of the patients have made great sacrifices and endured hardship to carry out the treatment because they believed it to be right. One boy who had spent all his money in a trip to Arizona where he hoped to find work, applied for admission to the class and was accepted. He had no money, was not strong enough to work and his family was not in a position to be of any assistance to him beyond giving him his three meals a day and a place to sleep. The first month he sat out of doors in an old sleigh in his yard. Then he was given a reclining chair and by nailing up empty sacks about an old grape arbor made a shelter from the wind. He spent 8-9 hours out of doors this way during the winter. When the frost was out of the ground he was given a tent in which he lived 21-22 hours a day. He improved almost from the start, gained 22 lbs. in weight, his cough ceased, the expectoration stopped and there was no fever. When his lungs were examined the last time, in June, there were no signs of active disease so he was advised to apply for admission to the State Sanatorium where he was accepted. His recovery and return to active work is practically assured. There is no gainsaying that patients of this sort are deserving of assistance.

PATIENTS' RECORDS

Each patient is required to keep an accurate record of the pulse rate and temperature at 8, 12, 4 and 8 o'clock daily, the amount and kind of food, and the total amount of milk, eggs

and oil. Notes are made on the condition of the appetite, digestion and spirits. The amount of cough, chief time of coughing, the amount of sputum, the occurrence of night sweats and the number of visitors. The thermometers are furnished without charge and are non-magnifying because they are easier to read. These records are made in books large enough to hold the daily records for one month. The instructions are printed inside the front cover, and on the inside of the back cover is a chart on which the number of hours spent in the open air is recorded.

The danger that the patient by so close observation of himself may become introspective has so far never materialized.

The records each day take the place of the physician's visit to the house.

THE CLASS MEETINGS

The members assemble at seven o'clock each Friday evening. While waiting their turn they become acquainted, compare notes and encourage each other. A sort of competition develops which makes much for discipline. It is not often necessary for instance to tell a patient before the others that his records are not satisfactory, or that he is not keeping at rest enough. The nurse takes the temperature and pulse rate to note the effect of the exercise of coming to the meeting and weighs the patient. The record books are examined and a resumé of the week is put on the history. New symptoms are prescribed for. The exercise is increased or diminished to suit the conditions. The effect of the diet is inquired into and alterations made when necessary.

The patients ask for information on any points not well understood, and report the supplies needed, such as paper napkins, sputum cups, etc.

The sputum is brought in once a month for examination for tubercle bacilli and their presence and number noted on the history. A complete physical examination is made once a month and recorded.

Tuberculin is given once each week.

MEDICINAL TREATMENT

The drugs used have been few. Those given for the most part were to relieve symptoms and not to affect the disease itself. Heroin and codeia for the relief of cough when severe; tincture of nux vomica for stimulating the appetite; bismuth subnitrate

NATURE OF WEATHER rain. & cloudyDATE April 19 - 08

TIME	PULSE	TEMP.	FOOD	NOTES
9 ^{AM}	84	96.8	1 orange	Sleep fair
			1 dish oatmeal	
			with milk	Bowels regular
			1/2 cup coffee	
			1 piece bread	spirits fair
			& butter	
			1 glass milk	cough hard
1 ^{PM}	82	98	Steak	
			Potatoes & Gravy	Expectoration
			Cabbage	3/4 box full
			1/2 cup coffee	
			1 piece bread	milk 5 pints
			& butter	
			1 glass milk	cold sponge
4 ^{PM}	96	101 ²		bath in the
6 ^{PM}			Steak & Cabbage	morning
			1 piece bread	
			& butter	
			1/2 cup coffee	
			1 piece cake	
			1 glass milk	
8 ^{PM}	94	102	between meals	
			4 glasses milk	
			4 eggs	

or paregoric for diarrhoea; sodium bicarbonate for hyper acidity; cascara for constipation.

For the relief of pleuritic pain, ice cold compresses were used, made by wrapping the entire chest in a large towel soaked with ice water and frequently changed. Strapping the chest with adhesive plaster to render it immovable was sometimes practiced.

In cases of pulmonary hemorrhage, complete rest in bed, an ice bag over the chest and full doses of nitro-glycerine has been the routine treatment.

The effort was made to impress the patients that drugs are not the curative agents in this disease and are used only as accessories to the out-of-door life.

TUBERCULIN

Tuberculin was used both for treatment and for diagnosis.

The use of tuberculin for curative purposes is not new, but in the last few years it has been used more and more. It has been employed in most of the sanatoria in this country and in Europe, with satisfactory results. It is not to be considered a specific but rather as an adjuvant. Its use is to stimulate the patient to produce within his own system an anti-toxine, which will assist him in overcoming the disease.

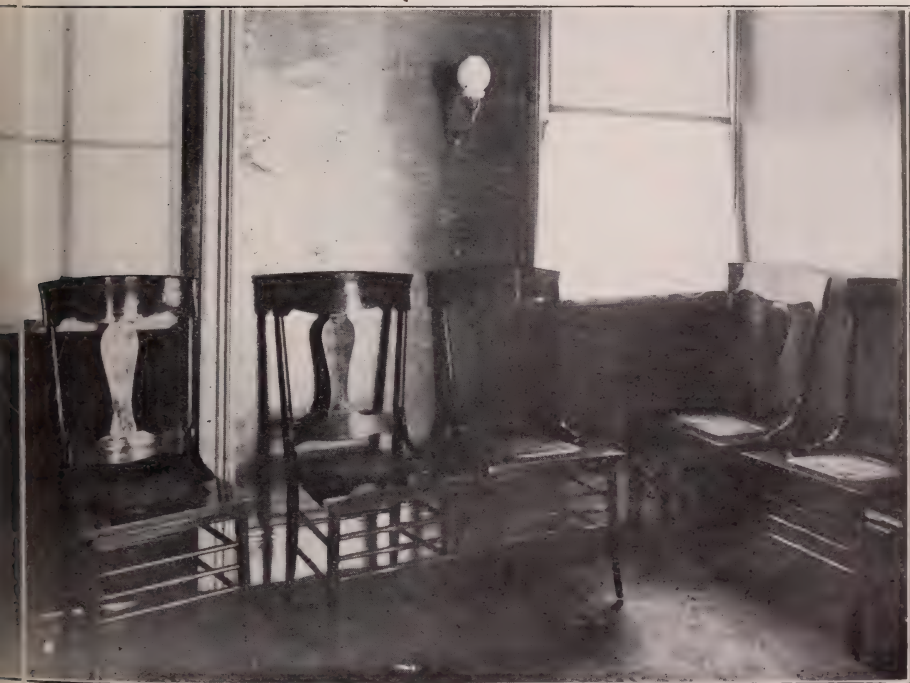
The so-called Tuberculin B. F. or Bacillus filtrate was used for this purpose and the initial dose is made very small (.000,000,1 grams) in order to avoid any reaction. The injections are made hypodermatically into the back once each week, the dose being increased .2 or .3 each time until .001 gram is reached. At this point the injections are stopped for a month when the procedure is repeated. If it is evident the patient is doing badly in spite of the tuberculin the treatment is discontinued.

No opinion can be given as to the results of the tuberculin therapy because not enough patients have been so treated to make a comparison with those not receiving the tuberculin. It certainly has not acted harmfully on any case and in only one case was there any indication of its having produced a reaction. On the other hand most of the patients seemed distinctly benefited by its use, showing a diminution in the severity of the symptoms. The usual contra indications to its use have been observed in all cases.

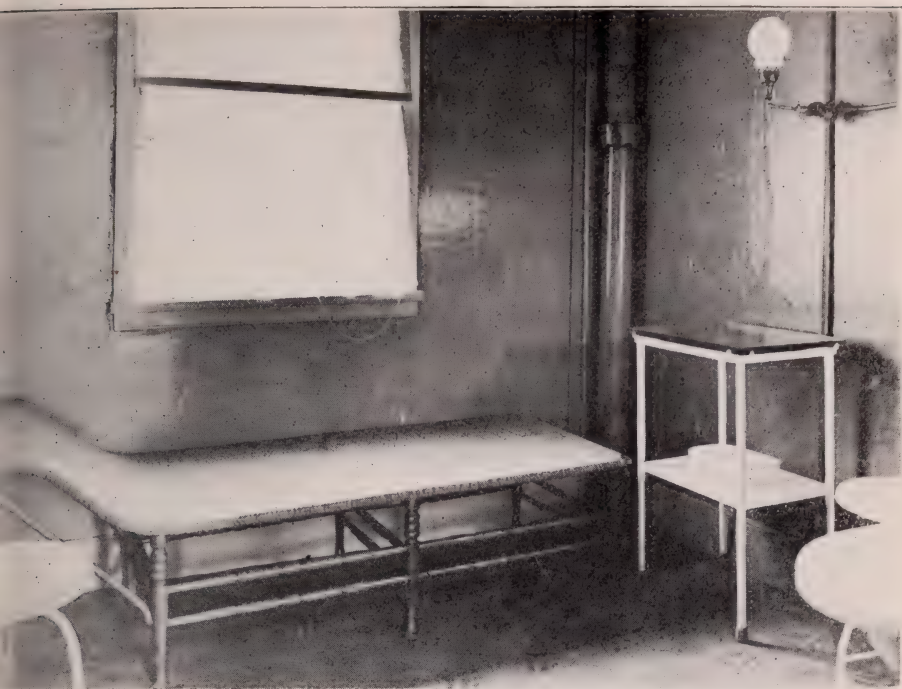
In making a diagnosis of tuberculosis by means of tuberculin it is necessary to make the first test positive with a minimum



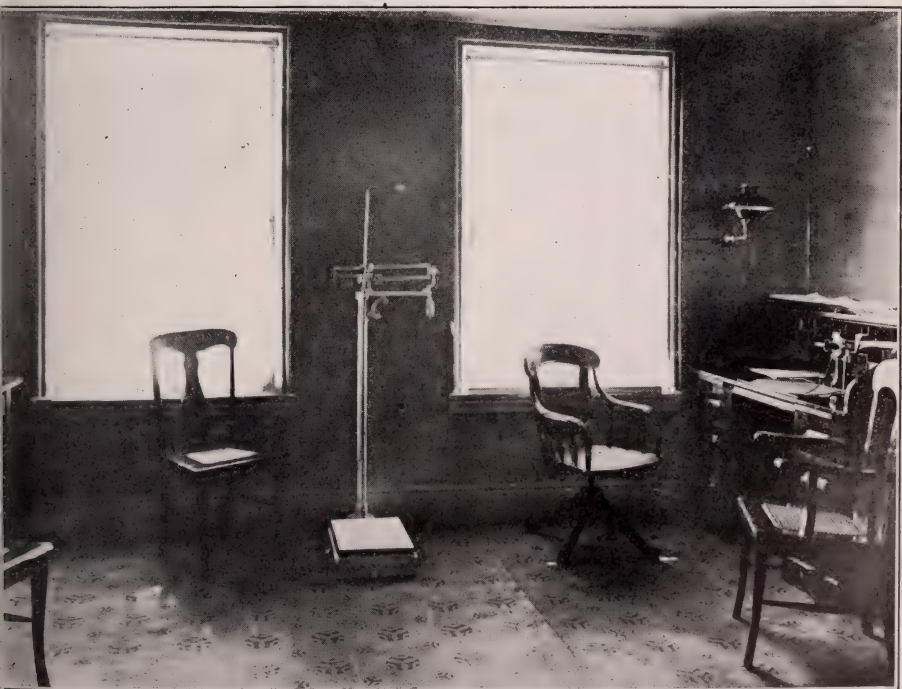
Relief station No. 2, Hill St.



Waiting room. Relief station.



Examining room. Relief station.



Office. Relief station.

dose. The patients often look with suspicion on tuberculin and frequently have a prejudice against its use. Should the first test fail it is often difficult to persuade them to return for further tests or more often they do not return at all. Furthermore the patients on whom the tuberculin test is indicated are generally incipient and are often skeptical that anything is wrong with their lungs, and while they may be persuaded to submit to one test, they are generally opposed to a repetition. For this reason we have adopted a dose of one milligram for future use in all cases, believing on the basis of the year's work that this dose will in the great majority of cases produce a positive, but not too violent reaction if the lesion is active.

Tuberculin has been in constant use from the beginning for diagnosis.

It has been employed only in those patients who gave physical signs of tuberculous lesions and in whom a positive diagnosis could be made in no other way. The original tuberculin of Koch was used for this purpose as follows:

The patient records the temperature every two hours for one day and if no rise of temperature is shown, one milligram (.001) of the tuberculin is given hypodermatically in the back. The temperature is recorded every two hours for another day and the patient is visited by the nurse who corroborates the readings and notes such symptoms as malaise, nausea, headache and excessive tenderness or redness at the point of injection. A rise in temperature of one degree above the normal accompanied by the symptoms noted above is considered a positive reaction *if* there are suspicious physical signs in the chest.

THE NURSE

To the nurse perhaps falls the most important part of the work and care is necessary in selecting one who is interested and in sympathy with her duties. She must possess a strong constitution and considerable physical strength and what is most important—tact.

The Society has continually had the services of a graduate nurse, believing that one so trained would assume greater responsibility and be better equipped to render assistance to the patients.

TROY TUBERCULOSIS CLASS

Nurse's Report

History No.

Name.	Address.	Age.	Place and Date of Application.	
House.	Stories.	Number of rooms.	Occupies.	Flat roof.
Balcony.	Yard.	Locality.	Dust.	Sunlight.
Sanitary conditions.	Length of time in present location.		Record of other cases	
Patient's room.	Bathroom.	Number in family.		
Financial condition.	Occupation.	Habits.		
Disposal of sputum.	Intelligence of patient.	Diet, with amount of milk taken.		
Family history.	Personal history.			
Date of joining class.	Date of nurse's first visit.	Time spent.		
Remarks.	Improvements suggested.			

She comes in daily contact with the patients at their homes and it is her duty to see that the discipline of the Class is carried out faithfully in every detail. If it is evident from her reports that the patient is not following instructions and continues to break the rules he is dropped from the Class. She not only visits the patients but also educates the family in the measures necessary for his proper management, how to protect themselves and what to do in case of emergency.

She reports the sanitary condition of the house, investigates the health of the other members of the family and brings them in for examination with a view to detecting the disease in its incipency. In this way we have discovered four incipient cases in two families, three of whom we have been able to place in sanatoria. Frequently it is necessary for the nurse to search out patients that have been called to her attention. She must enter their homes unsolicited. It requires tact and ability to make her errand known in such a way that her visit is acceptable.

Her visits to each patient are made daily, without regard to the weather, except Sundays and Fridays when she meets the patients at the Class meetings. During the year she has made 2030 visits. Among the very sick and bedridden patients she is able to render great assistance and comfort to the sufferers.

The Society has been very fortunate in having the services of a nurse who has been most faithful and diligent in her work. To her belongs the greatest credit.

RELIEF

The chief need of relief is found in cases where the patient is the wage-earner and has a family depending on him for support. It is necessary for him to stop working and in order for him to do so, means must be provided for the support of the family, as well as for the patient. This can sometimes be brought about by assistance from relatives, by finding employment for members of his family able and willing to work, or by a membership in a Sick Benefit.

The Society has given relief in the following ways:
To the Patient:

- a. By furnishing tents, couches and reclining chairs.
- b. By furnishing milk and eggs.
- c. Building porches.

To the Family:

a. Paying a portion or all the rent while the wage-earner is idle.

b. Finding employment for other members of the family.

c. Finding and moving the family into sanitary dwellings.

The Society has not had funds enough at its disposal to render as much relief as should have been given.

STATISTICS

Stage of disease.	Admitted.	Apparently cured.	Arrested.	Improved.	Unimproved.	Died
Incipient	3	1	1	1	0	0
Moderately						
Advanced	7	0	3	4	0	0
Advanced	8	0	0	2	1	5
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	18	1	4	7	1	5
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Per cent		5.5	22.2	38.8	5.5	27.7

Cases sent to Sanatoria not included.

N. B. The classification adopted by the National Association for the Study and Prevention of Tuberculosis has been used in compiling this table.

CASES SENT TO SANATORIA

Information based on communication from Institutions.

	Admitted.	Apparently cured.	Arrested.	Im-proved.
Incipient	5	3	1	1

THE NEW ORGANIZATION

While the Society for the Home Treatment of Consumption was carrying out successfully the work it started out to do, it soon became evident that a larger and more comprehensive organization, with plan of wider scope, was necessary in order to make much headway against the spread of tuberculosis.

The State Charities Aid Association which is organizing Relief Committees throughout the State offered its assistance and it was accepted. In January, 1908, the following committee, including the members of the Society for the Home Treatment, was appointed to be known as the Troy Tuberculosis Relief Committee of the State Charities Aid Association.

NAME	DURATION OF ILLNESS	DIAGNOSIS.	HOW LONG IN CLASS	WEIGHT	REMARKS
1 P. G.	10 years	Advanced Lungs and Larynx	7 weeks	+6 lbs.	Given a tent. Lived in open air. Furnished 2 qts. milk per day. Discharged for chronic alcoholism. Improved.
2 J. A. L.	3 months	Incipient Pleurisy with Effusion	6 months	+6 lbs.	Continued at work. Slept with windows open. In open air 6-8 hours per day. Discharged apparently cured.
3 J. D.	6 months	Very Advanced	11 weeks	?	Confined to bed when first seen. Given a tent and lived in open air. Felt more comfortable but lost ground steadily. Died.
4 T. C.	2½ years	Advanced Lungs and Larynx	11 months	-10 lbs.	Has lived in Denver, Chestertown, and Saranac Lake. Lives in tent in summer, on porch in winter (21-23 hours out of doors every day). Unimproved.
5 L. F.	6 months	Incipient	—	—	Refused treatment.
6 C. B.	2 years	Very advanced	10 weeks	—?	Moved to back porch. Lived out of doors 20-22 hours per day. Lost ground steadily. Died.
7 M. G.	1 year	Tuberculous Adenitis	—	—	Advised operation. Not admitted.
8 J. G.	5 months	Incipient	1 month	+19 lbs.	Insisted on returning to work. Discharged improved.
9 N. M.	6 months	Advanced	15 weeks	—?	Confined to bed. Family built a porch. Lived out of doors continually. At first improved but afterward lost steadily. Died.
10 F. B.	1 year	Advanced Lungs and Larynx	4½ months	—?	Gained 10 lbs. in first 2 months. Afterwards began to lose ground. Lived in tent. Furnished with milk, eggs, oil and medicine. Died.
11 E. M.	10 months	Moderately Advanced	—	—	Refused to give up work. Alcoholic. Not admitted.

SUMMARY OF CASES—(Concluded)

NAME	DURATION OF ILLNESS	DIAGNOSIS	How Long in Class	Weight	REMARKS
12 F. A.	2 years	Moderately Advanced	1 month	?	Patient sleeping on verandah. Has been under treatment too short a time to make much improvement.
13 M. H.	10 years	Advanced	11 weeks	+7 lbs.	Lived in room with window open during winter. Given reclining chair. Drooped for disobedience. Unimproved.
14 A. P.	?	Incipient	—	—	Sent to State Sanatorium at Ray Brook. Communication from Institution says patient has gained 26 lbs. Has no symptoms. Perfect result expected.
15 S. B.	11 months	Moderately Advanced, Asthma	7 months	+25 lbs.	Asthma made it difficult to remain continually in open air. Steadily improved. Went into Adirondacks. Arrested.
16 O. C.	5 weeks	Incipient	4 months	+7 lbs.	Slept in room with windows open. Days on the porch. Improved. Now at Stonywood improving rapidly.
17 F. C.	13 months	Moderately Advanced	3 months	—1 lb.	Discharged. Disobedience. Condition unchanged.
18 H. B.	1 year	Neurasthenia	—	—	Not admitted
19 W. C.	10 weeks	Moderately Advanced	—	—	Refused treatment at home. Went into the country to live. Communication states patient is much improved.
20 J. P.	—	No tuberculosis, Chlorosis	—	—	Had been attending sister who had just died of tuberculosis. Came for examination for this reason. Not admitted.
21 H. P.	—	No tuberculosis, Chlorosis	—	—	As above.
22 W. M.	7 months	Moderately Advanced	—	—	Would not give up work. Advised to seek out of door work in country. Not admitted.

AGE	DATE	DIAGNOSIS	PROGRESS	TIME	WEIGHT	REMARKS
24	V. C.	No symptoms	No tuberculosis	—	—	Not admitted.
25	C. C.	Incipient	Incipient	—	—	Sent to the State Hospital at Ray Brook. Communication from Institution says patient remained only six weeks. Improved.
26	H. O'N.	8 months	Advanced	—	—	Refused to take treatment at home. Went to Westport.
27	J. R.	3 months	Moderately Advanced	3 weeks	-21 lbs.	Has been moved into sanitary quarters. To live in tent. Has not been under treatment long enough to show any result.
28	F. N.	10 years	Moderately Advanced	—	—	Bronchiectasis. Not admitted.
29	M. P.	1½ years	Moderately Advanced	3 months	+ 9 lbs.	Moved to more sanitary house. Living on porch. Improving.
30	M. F. N.	20 months	Moderately Advanced	1 year	+24 lbs.	Moved from basement to sanitary quarters. Has improved steadily. Now arrested case. Able to do work.
31	D. M.	2 years	Moderately Advanced	4 months	+10 lbs.	Has been moved to more sanitary quarters. Lives on rear porch. Much improved. Stopped work. Work secured for wife.
32	P. M.	4 years	Moderately Advanced	4 months	+21 lbs.	Lived out of doors during day time all winter. Now lives in tent. Has recently been accepted at Ray Brook. Arrested.
33	E. P.	2 years	Advanced	7 months	0	Has lived out of doors all winter 22-24 hours out of doors per day. Now has tent. Improved.
34	E. A.	8 months	Incipient	—	—	Accepted at Ray Brook. Communication from Institution says patient has gained 15 lbs. and has no symptoms. Perfect result expected.

Average gain in weight 11.9 lbs.
 Average length of time under treatment 4½ months.
 Number of patients placed in sanatoria, 5.
 + Gained. — Lost.

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Assistant, Dr. J. H. F. Coughlin	-	Monday and Thursday
Dr. R. H. Irish		
Assistant, Dr. J. H. Flynn	- - -	Tuesday and Friday
Dr. E. R. Stillman		
Assistant, Dr. W. J. Garvey	- - -	Wednesday and Saturday
Dr. E. W. Becker, Laryngologist	- - -	Tuesday evening

To Illustrate Dr. Carey's "Report of the Troy Tuberculosis Class."

Albany Medical Annals, September, 1908



Temporary porch constructed by patient at small cost. Fitted with folding windows for protection in wet weather.

At the first meeting the officers were elected and the chairmen of the sub-committees appointed who were directed to choose their co-workers from the members of the general committee.

The following is an outline of the work planned by the Relief Committee:

A. Utilize fully the opportunity to send incipient cases to the State Hospital for tuberculosis at Ray Brook.

B. Provision for a hospital for the treatment of cases of advanced tuberculosis.

C. The establishment of a Relief Station for the examination and treatment of consumptive people.

D. In co-operation with the Department of Health to work for the compulsory registration of all cases of tuberculosis and the prompt disinfection of all houses vacated by consumptives.

E. The free examination of sputum.

F. Relief to patients and families and after care.

G. The general education of the community as to preventative measures.

H. Hygienic measures—the adoption of a suitable building code, licensing of common lodging houses by the Department of Health, etc.

It is the duty of each sub-committee to endeavor to bring about and make operative that part of the work planned which would naturally fall within its province.

The first work undertaken by the Committee was the equipment and opening of the Relief Station at No. 2 Hill St., to which any person with tuberculosis may apply for examination and treatment without charge. The Relief Station was completed in May and is open every week day evening at 8 P. M. Two physicians and a matron are in attendance each evening.

A complete report of the work done by the Tuberculosis Relief Committee will be made at the completion of its year, in April, 1909.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR
THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
DR. A. R. MOULTON, FIRST ASSISTANT PHYSICIAN, PENNSYLVANIA
HOSPITAL FOR THE INSANE, PHILADELPHIA PA.*Copyrighted, 1908, by Everett Flood.**(Continued from August Annals, page 661)*

CHAPTER XVI

Passing the months of Mary's banishment from the sitting-room, we find her once again an inmate there. It was evening when she returned, and the patients had retired. She was undressed and put into the bed opposite Ruth, who at first did not recognize her on account of her face being red and swollen. She remained in bed several days, and Ruth heard the attendants say that Mary had poisoned herself by eating the leaves of a large geranium. Her freak brought more trouble to herself than to any one else since she had to bear the discomfort it caused.

For a while she was quite tractable, but the spirit of unrest which possessed her would cause an outbreak occasionally. Upon being reported to the doctor, he had sent word to her that he would be in soon, and give her medicine. Mary knew what that meant, and the dread of it had the effect of sobering her considerably. Throwing herself upon a bed, by the side of which Ruth sat, she gave vent to her feelings with tears and lamentations.

"Oh! that dreadful medicine. I had rather he would kill me. What shall I do?"

Suddenly, as though the woman sitting beside her, apparently so indifferent to her suffering, aroused her indignation she threw herself toward Ruth, and grasping her by the arm, said fiercely,—“Ruth, Ruth, Why don't you pity me?”

Ruth would have pitied her worst enemy if he was obliged

to suffer the effects of the medicine, and poor Mary was her friend, and had been very kind to her; more than that Mary was motherless and Ruth was a mother. In the excitement of the moment the pity that filled her heart, gave back to her a power that had long before gone from her. She reached for Mary's hand, and clasped it closely to her own.

In her amazement, Mary forgot her trouble. "You dear, dear Ruth! You are sorry for me! Just press my hand again if you mean yes,—she does! She's sorry for me!"

Joyful in her discovery, Mary kept her own counsel, and when the doctor came he found her so wonderfully cheerful and pleasant, that he forgave her offense,—no doubt thinking his threat had a good effect.

Ruth's surprise at what had happened, was even greater than Mary's. After all these years of isolation she had exchanged thoughts with another.

One in great trouble had asked for her sympathy, and from the abundance of her heart she had done involuntarily, what she could not have done otherwise.

Surely, in God's good time, "All things work together for good." The doctor by kindness and tact had won Ruth's respect and confidence, and had brought her to a condition where, through the right channel, she might be reached still farther. That work remained for Mary, poor orphaned Mary, sick and wretched, so miserable that even her pity was needed.

That evening Mary lay down beside Ruth, and taking her hand she whispered softly,—“Ruth, do you like me? Just press my hand if you mean ‘yes.’ Please do. I like you ever so much.”

Ruth could not resist the appeal, and what she had done once was easier to do again. Mary was delighted when she felt a gentle pressure of her fingers. The attendant came and told Mary that she must go to bed; but before she went, she whispered, “We will talk more another time.”

For a number of days Mary kept her secret, asking Ruth questions, when she could do so without attracting attention; but after a while Mary's secret became so large, as secrets sometimes do, that she could not hold it, and with great pride she told Dr. Field, that she had been talking with Ruth.

“The conversation must have been quite interesting,” replied the doctor with a smile, “I presume she did most of the talking.”

"You can laugh all you like," said Mary,— "but it's true all the same." She then related what had taken place, and offered to prove her words true, and they went together into the dormitory where Miss Ray had preceded them.

"Mary says she has been conversing with Ruth. What do you think of that, Miss Ray?"

"I think it very probable," replied Miss Ray with a smile. "What did she say, Mary?"

"You just wait, and I will show you," said Mary. Taking Ruth's hand in her own, she said coaxingly, "We do talk together,—don't we Ruth; They don't believe me, and I want you to show them. Now please do, Ruth; If you press my hand they will know that I am telling the truth."

It was not an easy thing to do when the doctor and Miss Ray were watching her, but she could not resist Mary's appeal and she did as she was asked.

Dr. Field was delighted. He talked kindly to Ruth, and through Mary, asked her several questions that could be answered by yes or no. Ruth overcome by excitement cried hysterically. The doctor told Mary to stay by Ruth if she wished, but to be careful about talking more than was good for her.

After a few days, Ruth talked with the doctor when Mary was not present, opening her hand when she wished to say yes, and closing it for no.

Sometimes the doctor would spell out words by repeating the alphabet. He was greatly surprised to learn that this woman, who had been thought to be nearly demented, had an accurate knowledge of what had been going on about her. He asked her to try to speak, but he did not insist upon it, hoping that would come in time. Judging correctly that delusion kept her in her present condition, the only way to help her was to gain her confidence, and convince her that she was mistaken. This he tried his best to do.

Ruth consented to try to walk. At first she had to be supported, but in a week's time she could walk a short distance alone. Her limbs were so weak that she had to be very careful or she would fall, and, once down, she could not rise without assistance. The greatest kindness was shown her, even the patients being interested. Mrs. Griggs was a little envious, and declared that, "Some folks seemed to be of a good deal of consequence, all at once."

Dr. Hale, the superintendent, visited Ruth and spoke kind words of encouragement. The matron and the doctors from other wards, all had pleasant words for her.

"Could these be the same people that had seemed in league against her?" Ruth was bewildered when she thought of it.

Some predicted that the change would not be lasting, that she would soon relapse into her former state. When urged to write she refused, but Beth, finding that she understood the alphabet for the deaf and dumb, persuaded her to converse with her fingers. Dr. Field took pains to learn the method, that he might communicate with Ruth.

Mary's interest in Ruth served to divert her mind considerably from her own misfortunes. She did not, however, allow her proclivity for mischief to grow rusty for want of use. She whispered in Ruth's ear, one day, a secret which she charged her not to repeat. She said that she had taken the buttons from her dress, and swallowed them.

Ruth looked, and the buttons were gone. She remembered they were made of metal and were of good size, and she was greatly distressed. When Beth entered the room, Ruth managed to attract her attention.

"Mary says she has swallowed all the buttons that were on her dress," she spelled with her fingers.

Beth could not help smiling. I think Mary must have been joking, but I will see about it.

Finding Mary in the sitting-room, she inquired what she had done with the buttons that were upon her dress.

"I have swallowed them," replied Mary.

"I shall report you to the doctor."

"I don't care if you do, for he can't get them," the girl answered defiantly.

"I am not so sure about that as you seem to be; however, we will see what he says about it."

Perhaps Mary thought that Ruth would not expose her, or, she might have reasoned that it could not be helped, and she would enjoy the excitement that she might cause.

The doctor and Miss Ray were soon in the sitting-room. Mary was questioned and adhered to her statement. There had been upon her dress eleven good size metal buttons.

"Don't you know that they may cause your death if they are not removed?" asked Dr. Field.

"I don't care if they do, and I hope they will," she answered.

An emetic was given her. At first she refused to drink the medicine, but when Miss Ray was told to bring the feeding-tube, she somewhat reluctantly swallowed it. The buttons were not forthcoming, and the girl was evidently in great distress. A powerful cathartic was given her, which had the desired effect.

Dr. Field said, pleasantly, to Mary, "Be sure and remember in future, that two or more, always, take part in a game of button." He did not forget to commend Ruth, for the part she had taken, telling her that she had without doubt, saved Mary's life, and others a great deal of trouble.

What could be sweeter to Ruth, after the years that she had felt herself a useless burden, than to know that, even in the least, she had helped a fellow being? To be made to know that she was needed, that she could be of use in the world, was what would save her.

A month of Ruth's new life passed away, and in the time she had gained slowly but surely.—Remembering that she had not spoken or even whispered a word for four years, it was not strange that she found it hard to do it now. Every evening when Dr. Field bade her good-night she gave him her hand in reply. He urged her to try to speak the words, but it seemed to her impossible to do so. The habit of silence had bound her with a chain that was hard to break; but, working with patience and perseverance, the doctor conquered, and she spoke the words, "Good-night," although at first in a faint whisper. For some days she spoke no other word, but soon she was able to talk freely. The doctor did not speak of her new accomplishment at first, thinking best to have her kept quiet. Great was the astonishment, when Ruth surprised an attendant by speaking to her.

A new world seemed to have opened before her, although she was still troubled in many ways, it being no easy matter to shake off the delusions of years. Sometimes their remembrance came over her with such force, that for a time she gave up to them, and but for the unvarying kindness of those who cared for her, she would have lost all that she had gained. Dr. Field would say to her, "You must remember that you have, for years, been a very sick woman, and that although you are much better, it will be some time before you are strong and well. You must not give up, but remember that, when you are feeling troubled,

if you come to me, I will try to help you." He told her that it was not unusual for persons who were sick to have optical illusions or to hear unusual sounds.

Of one delusion Ruth had not spoken, and that was the belief that her thoughts were heard. It seemed so real to her, that she still thought it must be true. She had no great secrets that she wished to hide, but she could have no private thoughts, and the idea caused her great suffering. There was one inquiry that she wished to make, but so much depended upon the answer, she hesitated. She remembered the girl that she hurt in the yard. If she could be sure that she did not cause her death, it would remove a great load from her heart. She summoned courage to say to Dr. Field, "There is something I wish to ask you, doctor, and I hope you will answer me truly."

"Why, certainly! I will always tell you the truth. What is it?" asked the doctor.

"I hurt a girl, in the yard, a long time ago, and I wish to know if she died, if I killed her," she added faintly.

"I don't think it can be possible," the doctor answered; "for I have heard nothing about it. What was her name?"

"She was called Jennie."

"Why did you hurt her?" questioned the doctor.

Ruth told him the circumstances, adding, "I am sure I did not wish to hurt her. I did not realize what I was doing."

"And you worried about it, all this time?"

"I have thought about it a great deal."

"But you must remember," said the doctor, "that if she died, you were not responsible."

"I know, but it is a dreadful thing to end a life."

Dr. Field promised to inquire in regard to the matter, and he left Ruth feeling as though she was waiting for the verdict of a jury.

When the doctor came in again she watched him closely. He chatted with other patients awhile, and then took a seat beside her, speaking of other things, but not of what she wished him to.

"Please tell me what I wish to know," said Ruth.

"I was waiting for you to ask me," answered the doctor, smiling. "You may be at rest in regard to the girl you hurt. She was as well as usual in a few days. She was an epileptic patient, and has since died, but you did not hasten her death."

"I am very thankful," said Ruth. "You are sure about it?"

"I am sure, for I not only made inquiry, but I looked in the book where a record is kept. Now you have one thing more to be thankful for, and one less to worry about. I have a proposition to make. How would you like to visit the green-house?"

Ruth loved flowers, but she did not like to meet strangers, and she had not been out doors for many months. It seemed to her, that the windows of the building would be so many pairs of eyes, staring at her.

"I cannot go, doctor; please do not ask me to."

"I think it will do you good," replied the doctor. "I know you are not strong, but Miss Ray will go with us, and will assist you."

"You are very kind, but, indeed, I had rather not go. I do not like to meet strangers."

"That is something you must overcome. How can you go home to your husband and children, if you cannot meet people?"

Ruth saw the force of the argument, but still she hesitated.

"You had better go, I know you will not be sorry," urged the doctor. "You shall have the most beautiful bouquet that the gardener can gather."

That was a temptation truly, but Ruth's desire to please the friend who was so kind to her had greater weight, and she consented to go.

"Why can't we take Elsie and Mary with us?" asked Miss Ray. "They are Ruth's chums, you know."

"That's a good idea, get them ready and we will go right away."

It was December weather, and the ground was covered with snow. Ruth, wrapped in a warm shawl and hood, walked slowly down the long flights of stairs, supported on either side, by Miss Ray and the doctor. Stopping often to rest, they reached the green-house. Ruth had to sit down and rest a while, for she was very tired. The place seemed like fairy land to her. Were flowers ever so lovely before? All her old favorites were there, besides many that she did not remember to have seen. She felt like crying as she went from one to another. Mary, slyly broke one here and there, and gave them to Ruth, who looked at the doctor to know if she could keep them.

"That is against the rule, Mary, but as this is an extra occasion, perhaps he will pardon you, if you don't pick too many."

Leaving them awhile, the doctor returned with the promised

boquet, so many flowers that Ruth could hardly hold them in her hands, and they were of the choicest. They returned to the hospital, but Ruth could not climb the stairs, and the doctor taking Ruth in his arms, kindly carried her to the sitting-room. Her wraps were removed and a stand placed beside her chair for the flowers.

Mrs. Griggs, who had been watching from the window, said to some one near her, "Well, did you see the circus?"

Ruth heard the remark, and her pleasant outing ended with tears.

Evergreens had been brought from the woods to trim the chapel for Christmas, and, every day for a week, some of the patients went with attendants to assist in the work. It was the gala day of the year at the hospital, and no pains was spared to make it pleasant for the patients. A Christmas tree with bags of nuts and candy for each one besides a treat of oranges, cake and ice-cream. A band from the city furnished music for the occasion, when doctors, attendants and patients joined in a merry dance.

Ruth declined going to the chapel, but she willingly consented to string the corn, which was used to garland the tree. When it was finished she could truly say,—“This is the first work that my hands have done for more than six long years.”

As yet Ruth had not voluntarily taken food. When urged to do so she would say, “I am afraid I shall be sorry if I do.”

“But you must know by this time that we shall not allow you to starve,” replied Dr. Field.

“I do not wish to do anything to prolong my life,” said Ruth.

“Now stop and think, if that is not very unreasonable. As long as you remain in this building, we shall be obliged to feed you, if you do not eat. It causes me a great deal of trouble, and is very disagreeable to you. If you will take your food willingly, I shall not oblige you to drink so much as we feed you. For the present, if you will drink a cup of milk three times a day, I shall be satisfied. Think it over. You certainly cannot go home to your children, as long as we are obliged to feed you.”

“Perhaps I cannot go, whichever way I do,” said Ruth. “My friends do not write to me, and they have not visited me since I got better.”

“That is the trouble, is it? I can make that all right. Your friends do not as yet know how much better you are. It is not

best to have them visit you, until you are strong enough to bear the meeting without injury to yourself. You do not wish your husband to come and be told that you do not take your food. Be sure, he will be glad to come when I write for him to do so."

That evening when Mary brought a cup of milk to Ruth, she did not refuse to drink it, and from that time the stomach tube was a thing of the past. On Christmas morning, she drank her milk from a dainty china cup and saucer, a gift from Beth. The other attendants and Miss Ray, each remembered her with a Christmas token, and although the gifts were not of great money value, they were priceless treasures to the recipient.

Mary sat with Ruth most of the time, often reading aloud from books that Ruth selected for her. She was delighted with "Faith Gartney," "Little Nell" and "The Cricket on the Hearth." Ruth told her the story of "Kathrina," and the doctor brought the book to her from his private library. Mary read it from first to last with unabated interest, catching the spirit and meaning of the author in a manner that astonished her listener, when she remembered the sad story of the girl's life.

Poor, sick Katie, still struggling with her foe, the asthma, had taken no notice of the change in Ruth. Brightening up one day, she looked very earnestly at her, and then taking in the situation, she rose from her chair, and walked with tottering steps, and sat down beside her.

"And this is you, yourself, Mrs Campbell? Why! You've got well, haven't you?" She spoke with difficulty, stopping to cough.

"Yes, Katie, I am gaining fast."

"And you can talk and walk like the rest of us; I'm glad for ye, Mrs. Campbell."

"Thank you, Katie; I wish you may get well, too," said Ruth, taking the thin, white hand in her own.

"Oh, yes," said the patient sufferer, "I am getting better very fast. Pat is coming to take me home in just two weeks, and when he goes back to Boston, I'll have him step in and tell your husband that you are well, and have him come for you. He'll be glad to hear."

"My husband does not live in Boston, Katie."

"Oh, Pat will find him there, for he knows everybody."

"All right, Katie, you are very kind," and Katie went back to her corner, to wheeze and chatter, as before.

CHAPTER XVII

Dr. Field wished to remove Ruth from the sitting-room into the adjacent ward, and give her a room by herself, but the plan had one objection. She had been a suicidal patient, and although she had been more cheerful of late, there might be a relapse. She could be more closely watched in the sitting-room, and if he removed her it would be at his own risk. Feeling sure that the change would be a benefit to her, he resolved to talk with her about it, which he did when opportunity offered. He laid the matter plainly before her.

"I see no reason," he said, "why you may not continue to gain, and in time go home to your family. It surely is worth trying for."

"If I can do so, I will ask nothing more," replied Ruth. "Do you honestly think it possible, doctor?"

"Not only possible, but probable. The work now remains, to a great extent, with yourself. You must have a strong will. Doubtless, you will have gloomy, despondent hours, but you must overcome such feelings. We will do our best to help you. I wish you to have a room by yourself. I believe you to be an honest, truthful person, and, if you promise me that you will not do yourself harm, I think you will keep your word. I shall be held responsible if anything happens to you. I wish to do what is for your good. I think you are rid of the foolish notion that you do not wish to live. Is it not so?"

"In my right mind I shall always be willing to live, but I cannot say I am always glad to. I am very gloomy sometimes."

"That is not to be wondered at, but still, I think you are strong enough to overcome such feelings. I will not ask you to promise me now, but wish you to think it over, and I will talk with you again."

Left to herself, Ruth did think, long and earnestly. The utter misery of her life, during the years that she had passed in the hospital were fresh in her mind,—years of unutterable longing without a hope. Now she was beginning to look forward. She could see that much of her trouble had been caused by imagination. She thought of her boys, and wondered if they would care for her, after the years of separation. If she could grow strong enough to work for them, it surely would be better than sitting there. Again, she had no right to remain a burden, if there

was a chance for her to do otherwise. She resolved to try to do, in every way, as her kind friends wished. Her thoughts went back to the first months of her illness. She remembered her prayers to God, that he would save her, when sick and troubled her brain was giving way. She thought he would not listen, and now she knew that he had loved her all the time. She had expected him to work in her way, but he had not turned aside the laws of nature to save her. As she went wearily down into the Valley of the Shadow, slowly she must climb into the light. She did not ask God to help her. It would seem like doubting One who had safely led her thus far on a perilous way. With a grateful heart she trusted, where she could not see. Through God's Son the blind had received their sight, and the dead had returned to life. She had been blind. Ay, she had been, as it were, dead, and the same Spirit of love and mercy, that centuries ago healed the sick and raised the dead, had opened her eyes and bade her rise and walk. Now that she had been lifted out of the pit into which she had fallen, she must not refuse to go forward because she could not clearly see the way.

An old hymn came with new meaning to her mind:—

“He leads me on
By ways I cannot know,
Upwards He leads me,
’Though my steps are slow,
’Though oft I faint, and falter by the way,
’Though storms and tempests oft obscure the day,
Yet when His will is done
I know He leads me on.”

When Dr. Field came for her answer, she was ready to promise him, that she would never wilfully try to end her life.

“Will you promise to tell me if you are tempted to do so?” asked the doctor. “Remember the risk I am taking upon myself.”

“I will promise to do as you ask me,” replied Ruth. “I could not do what would bring trouble upon you after all your kindness to me. It is through you and those who assist you that I am not where I was a short time ago.”

“You must not think too highly of me, I am only one. I think,” continued the doctor, “I will give Miss Channing a room on the ward. She is getting better, and she seems to like

to be near you. You have helped me with her. You may expect to go soon."

Ruth was pleased with the thought of having a room by herself, yet she regretted leaving the companions of her sorrowful days in the sitting-room. She wished that she dared to whisper some words of comfort to Mrs. Doane. Miss Ray came for Ruth in the afternoon, and taking her arm said, "We will go now. Your room is ready for you." Ruth hesitated a moment and then said, "I wish I could speak to Mrs. Doane before I go."

"Certainly you can, and I will go with you," said Miss Ray pleasantly.

Crossing the room to where Mrs. Doane sat, Ruth bent and kissed her cheek saying, "I am going out on the ward to stay, Mrs. Doane. We have been here a long time together, and I feel very sorry for you. I would like to help you."

Mrs. Doane did not move or speak, but the tears that came to her eyes, and rolled down her cheeks, showed plainly that her heart was touched by the kind words.

Ruth Campbell went out of the room that had been her home for more than three years. As she entered the ward she was met by a patient who had done penance, sometimes, in the sitting-room, and who said, "Take my arm, Mrs. Campbell, I will show you to your room. Put yourself right under my care."

"Don't trouble yourself. I will look after this patient myself," said Miss Ray to the pert little woman.

"Very well. I suppose it will be as you say," and the would-be assistant walked loftily away.

As Ruth passed through the ward, she saw among the patients there, the gray-haired old lady, who had been a terror to her the first months of her stay in the hospital, also the patient who had hurt the night-watch.

Poor Ellen's hands were locked in a leather muff, showing that she was not, as yet, a safe person to have her liberty. The room assigned to Ruth was very pleasant. There were pictures upon the walls, and beautiful flowers upon the table and the bureau, which Miss Ray had kindly placed there.

"This is your room, Ruth. Do you think you will enjoy it?"

"I am sure I shall, for it is very pretty. How kind and thoughtful you are Miss Ray. I wish I might do something for you in return."

"It is a pleasure to help those who appreciate what is done

for them, and who try to do, as we ask them. The attendants' rooms are nearby and you will not be lonely,"

"Will you visit me as often as you did when I was in the sitting-room?" asked Ruth as Miss Ray was leaving her.

"Most certainly," was the reply. "You will not be left too much alone."

When Miss Ray left her, Ruth went to the window and looked out. There was the lake, the city, the farm house, and the cars in the distance! The same view, that, in times gone by, she had gazed at with such different feelings. As from the abundance of the heart the lips speak, so in like manner, the eyes see. When hope, faith, and trust were gone, she had seen in the waters of the lake, only a resting place; the city had been filled with mocking demons; and the cars had rattled by to remind her that she was separated from those she loved. Now the sun shone brightly on the water; the city was filled with people who had their measure of joy and sorrow, each busy with his own life work; and the cars said noisily, "I will carry you home, carry you home." If, in her weakness, she heard a whisper, "You will never go there. They are deceiving you," she drove the tempter away and resolved never to yield. She was aroused from her reverie by a voice, and turning saw one of the patients sitting upon the bed watching her.

"I don't know as you are to blame for being in this room," said the visitor, "but I think that Mrs. Page ought to have it. She likes to sit here, and won't be contented anywhere else."

"Was this her room?" asked Ruth.

"She stays here most of the time, and is crying because she can't have it. I think it will be very selfish in you to keep it."

"I am sorry," said Ruth, "and I will ask Dr. Field to give it to her."

"Oh! don't go to making a row about it. I thought I would tell you, out of kindness to her."

Ruth failed to understand in what way her own discomfort could benefit her neighbor, if she was not to mention it.

"There she is now," said the visitor, and looking through the door, Ruth saw a beautiful woman, not more than thirty years of age. She was walking very fast and her arms were folded behind her. Presently she stopped in the door-way and asked Ruth,—*"Are you to have this room?"*

"I suppose I am; would you like it?"

"Yes, I would, and I will tell you why. I am dreadfully troubled by some one who throws pelts at me, and I won't mind it as much when I am in this room?"

"Pelts!" said Ruth in amazement, "What do you mean?"

"Why, I mean just what I say. Pelts are thrown at me, and they hit me, and hurt me. Don't you see them? There's one now. It hit the side of my head. Oh dear! Oh dear! It's dreadful."

She left the room, wringing her hands, and the other visitor followed.

When Dr. Field came in Ruth laid the matter before him, saying, "I don't like to take this room, if she would be happier here."

"She could not have the room if you were not here, because she is a noisy patient, besides, she would have as much trouble here as elsewhere," replied the doctor. "You must not allow the patients to trouble you. If they do you can close your door, or speak to an attendant. I wish to speak to you about going to the dining-room," continued the doctor. "This will be a good time for you to commence, and you will gain much faster if you eat nutritious food; I wish you to go to your supper to-night." Ruth consented, much against her will, but when the time came, she was given a seat at the table beside Beth, and the dreaded ordeal was made easy.

Miss Channing had been given a room in the ward and she asked of Ruth the privilege of sitting with her through the day.

"I am very lonesome," she said, "and I am afraid of those strange women." Ruth gave cordial assent, and Miss Channing was, for a few weeks, her constant companion. Sometimes her own burden was lightened by speaking words of cheer to her neighbor. The door usually stood open and other patients often entered. One young girl, an epileptic patient, used sometimes to sit with them. She was nearly demented, and her greatest comfort seemed to be a box of Christmas and New Year's cards that had been given her by different persons. She looked them over many times a day, and it was strange that she remembered the giver of each one. She did not understand why those around her were not as interested in them as she was. One day she came to Ruth, filled with grief and indignation.

"What is the matter, Lizzie?" asked Ruth.

"They've got them, the bad ones," a name she always gave to those who troubled her.

"Got what, Lizzie?"

"My cards," she said, pointing to the box.

Some patient had stolen a few of them, and she had missed them. They could not be found and she mourned herself sick, and she was not reconciled even when Dr. Field bought a dozen prettier ones for her. Ruth tried to teach her how to hem towels, and it made a good time for Lizzie, although some of the stitches had to be replaced by shorter ones.

As Miss Channing's physical health improved, she gained mentally, and she was soon able to return home. She bade Ruth good-bye with many expressions of gratitude for her kindness, but Ruth said, "We have helped each other."

(To be continued)

THE SURGICAL TREATMENT OF TONSILS AND ADENOIDS.

Read before the Otsego County Medical Society, June 9, 1908.

By A. H. BROWNELL, A. M., M. D.

Vice-President of the Society, Oneonta, N. Y.

Gentlemen of the Otsego County Medical Society:

In suggesting to our Secretary the list of topics for consideration to-day the throat affection of children seemed to me timely and a little out of the usual run that we have had in days gone by. The subject of adenoids is comparatively a new one in medical lines. Only about thirty years ago that they were recognized at all, and their removal generally a very few years.

The tonsils are situated between the anterior and posterior pillars of the pharynx, are in normal condition, three-quarter inch long, half inch broad and half inch thick. (Their usefulness a much disputed question.) That they are not vestigial is shown by being most highly developed in man. It is claimed by some that they are the sentinels at the door to detect and entrap all germs of infection, and that they perform this function is proven by the large number of bacteria within their crypts when removed, or contents examined. However just as soon as the general

tone of the system is lowered, either from local or general causes, the tonsils are not able to ward off the entrance into the system of the bacteria which they harbor within themselves.

Wilson says of them: "They should be looked on, not as a seat of possible inflammation, and hence a source of danger, but as a part of a group of active glands placed in an area susceptible to disease. If these glands, however, become the center of recurring inflammation, if their mucus covering is obviously a nidus for microorganisms, if their size is hurtful to development, if in short they are no longer physiological but pathological as pathological tissue they should be removed."

Adenoids are similar to the tonsils in their structure. They are lymphoid glands which grow in the vault of the pharynx. Why, or for what, unknown. Their principal use seems to be as a port of entry for germs. Dr. Hutchinson says of them: "They seem painfully like the chip on the shoulder of a fighting man ready to be knocked off at the slightest touch and plunge the whole body into a scrimmage." They were discovered by William Meyer, a Danish surgeon, some thirty years ago. He called them post nasal growth. They are also called pharyngeal tonsil, or Luschka's tonsil, and are absolutely useless and a constant danger. They should be carefully looked after. They have a tendency to atrophy at fourteen or sixteen years of age, but do not always do so by any means, and a "let-alone" treatment is a dangerous experiment. I have operated on one case at sixty-six years and several past twenty-five. Dr. P. D. Frank reports three cases of simple adenoids in patients at sixty, sixty-five, sixty-six years. Just how young they may appear is uncertain. Few operations are reported under one year, and yet Dr. H. Jareckey, in the *New York Medical Journal* of 1904, reports five operations in infants from eight days to ten weeks old.

There is no class of cases that stamp themselves so clearly on the face as enlarged tonsils and adenoids. First and possibly most prominent is the mouth breathing. Dr. Hutchinson says: "No child ever becomes a mouth breather so long as he can breath comfortably through the nose." Mouth breathing is not a habit at the start, although possibly may be so confirmed that when all obstruction is removed, it may be necessary to use means to change the habit. Other signs are a vacant expression, short upper lip, contracted nostrils, prominent irregular teeth and list-

less eye. There is usually a lack of interest in work and play. At night sleep is restless; night terrors frequent; snoring respiration is extremely characteristic. Constant snuffles, so that parents say the child has cold in the head all the time. The growths close up the eustachian tubes so that the ears become affected and infected. The eustachian tubes in childhood are shorter—straighter, lumen larger and constantly open, so that the bacteria need not even pull the latch string to enter and do the mischief they are so ready for. There is almost always a dropping of mucus into the pharynx, which is swallowed and upsets the stomach.

Taste and smell are impaired in proportion to nasal obstruction. Dr. Head says: "Two-thirds of all earache and five-sixths of all deafness is due to adenoids." There are few conditions of childhood so common, few so fruitful of mischief, few so completely curable, few that are attended with such gratifying results. While there is a tendency to atrophy at adolescence, it is not safe to wait, for while the cause of trouble can be removed the effects cannot always be eliminated." Dr. Hunt makes this statement: "We may frequently have adenoids with little or no enlargement of tonsils, and but scarce ever enlarged tonsils without adenoids." Granting then that we have enlarged tonsils and adenoid mass. What is to be done? I think it is almost universally conceded the only satisfactory method of getting rid of the offending members is by surgical means.

It is not particularly painful and many operators do not use anaesthetic, but to my mind the shock and danger is much less with an anaesthetic than without. If you remember how difficult it is to so much as touch the pharynx of a child with a swab, you can have something of an idea how much more difficult for such an operation, when done without an anaesthetic. The child must be held in the lap of an attendant, another holds the head so that there is little chance for the child to struggle.

Personally I always use an anaesthetic under fourteen years of age because I believe I can do a more thorough operation. There is no screaming of the child, and the fright to the parents much less. When operating without anaesthetic the child is upright and the blood and mucus runs down into the throat. When done with anaesthetic the head is dropped over the end of the table, lower than the body, and the blood runs out through the nostrils and mouth into receptacle outside. I think one can

be far more sure of getting all the pieces when under an anaesthetic. Even in adults while I have operated a good many times I find I am not as satisfied that everything is clear as when the patient is under the control of the anaesthetic.

There are many forms of instruments for the removal of both tonsils and adenoids. Each operator having his own choice. Personally I have found the McAuliff forcep the most useful for a large share of adenoids. The ring knife for the remaining tags also useful.

The location of the growth has much to do with the choice of instrument. For the tonsils I have used the snare, the scissors, and the tonsilitome. I much prefer the latter. If the tonsil is separated from the pillars and then crowded well forward by the assistant there is little difficulty in doing a clean operation. There are few operations where so much blood is lost. The hemorrhage however, is of short duration in the large per cent of cases. Twice only have I had any difficulty in checking hemorrhage: One in a nurse, twenty-three years old, operated on with local anaesthetic—This case had to be tamponed; One in a girl of eleven which yielded to adrenaline. In all cases after the tissues are removed, I use alcohol on an applicator and paint over entire vault of pharynx. This acts both to check hemorrhage and as an antiseptic.

Recovery is rapid in almost every case. Once only have I had any inflammatory reaction. That was in a girl whose tonsils were very large and the crypts packed full of pus-like material. This case had a high temperature for three days and the friends thought she had diphtheria.

The results of operations are manifold and those who see the most operations and watch the improvement of the children afterwards are most enthusiastic.

Some few years ago there was such a large number of children in the New York schools, who were troubled with these growths, it was decided to remove them in the schools, and a large number were operated upon. The cry went out among the Yiddish women "the Kristis are cutting the throats of the children," and what is known as the "Mothers' Riot" was started. The mothers coming by the hundred to demand their children from the schools. And yet even these women were satisfied later on when they saw results. The surgeon making this report said: "No uncommon thing to see a child jump from three to five inches

in height, six to twelve pounds in weight, one to three grades in school within a year following the operation."

In my own practice I have seen results that were extremely satisfactory. One of the last of my operations was on a young man of twenty-one years. He had been to the test car and failed to pass his examinations for the railroad, because of total loss of hearing in one ear and partial in the other. Two weeks after the operation he told me he could hear as well as he ever had done. Could go to bed and breathe through his mouth as he had not done in years. And what pleased him most, passed his railroad test all to the good.

Another patient a girl of six years, had always seemed sickly from babyhood, constant "cold-in-the-head,"—pale, bloodless, listless child. Operated on two years ago. Child was in my office a few days ago and the grandfather who was with her said she had been perfectly well since the operation, and whereas, before operation she was fretful and peevish, now she was bright, and cheerful and a more healthy child one could not wish to see. I could give you case after case of the same kind if it were of use to repeat them.

Just a word as to the return of the trouble. So far as I know only one case of adenoids on which I have operated has shown any return. This was in the girl already referred to who had such decided hemorrhage. It was one of my earlier operations and because of the hemorrhage I could not clean out the throat as I would like to have done. I have since come to believe that the hemorrhage was due to the incomplete removal. For as I treat more cases and read more on the subject, I find that complete removal of adenoids is less likely to have hemorrhage than where a portion is left behind.

As to the return of tonsils, I have never had one return or enlarge that has reported to me. It is possible, of course, that such a case might have gone to others. I have repeatedly removed tonsils when they claimed to have been operated on before. It is difficult and often dangerous to remove tonsils that are diseased and yet not enlarged. In such cases it is possible to remove a part and to replace the open mouth crypts with fibrous scar tissue, thus lessening the danger of infection.

I would urge upon the profession closer attention to the children. If they complain of trouble with hearing, earache, constant cold in the head, hard breathing at night or even if

backward in school and not interested in their play, examine them yourself or send them to one who can and have the throat and nose made right. Give the children a chance to breathe and they will be better able to meet the daily duty of life on a par with others. Deprive them of this blessing and who is at fault if they fall behind in the race.

THE RELATIVE AND ABSOLUTE SIGNS OF PULMONARY TUBERCULOSIS

*Read before the Franklin County Medical Society, Meeting at Saranac Lake,
June 23, 1908.*

By E. G. WHIPPLE, M. D.

Mr. President and Gentlemen:—

The subject of pulmonary tuberculosis has been viewed and reviewed from every standpoint until now one cannot write or read an article that has not been fairly well exhausted before.

It is especially difficult for one of very limited experience to give anything of value to a body of men, many of whom have devoted and are devoting their entire attention to this subject, but I feel sure that there are many of us in general practice to whom a little review is of greatest value and importance if we wish to be able to recognize and treat tuberculosis when we can secure the best results. It is only because there are a few here who are not giving special attention to this subject that I, of very limited experience, have accepted the invitation to recall to you a few facts of importance in diagnosis.

The results in the crusade against tuberculosis must first come from the ability to recognize the disease and to recognize it in its incipency. The patient, through ignorance, may not consult the physician early; that is not our fault, but we are liable if we do not or cannot find it when it exists. The main object in correct diagnosis is that we may prevent or better treat the disease. It is, therefore, the early diagnosis of pulmonary tuberculosis that is most important and which I shall consider.

The diagnosis may be made upon the history and symptoms, the physical signs, the presence of the tubercle bacillus, the tuberculin reaction and the autopsy findings. These data are either

relative or absolute. The history and symptoms and the physical signs, when considered separately, are relative, but when considered together, in most cases, they become absolute. The presence of the tubercle bacillus, the tuberculin reaction and the positive autopsy findings may be considered as absolute signs, although they are, with exception of tuberculin reaction, late diagnostic signs. In the tuberculin reaction, we have a valuable absolute sign, although, as yet, it is not as practical as we would desire. It is most often from the relative signs that we have to base our diagnosis and many times we have but few of these. For this reason, I consider these signs to be of greater importance to us all, and especially to the man in general practice, whom I know oftentimes will not diagnose a case as pulmonary tuberculosis until one of the positive or absolute signs is present.

Briefly, let us consider the most important of the relative signs. The history and symptoms are of great importance to us. The family history should be carefully investigated with special reference to the disease itself or any condition which might tend to lower the resistance of the offspring. While facts obtained here are not conclusive, they may help us when our other points for diagnosis are few. The past history, with its symptoms, very often gives us our first clue. Inquire into the diseases of childhood, especially the history since measles or whooping-cough. With a knowledge of the early life, we can in some measure determine the resistance of our patient. Note carefully the age of puberty and early adolescence when often we get our earliest suspicious history. A history of excesses, especially alcohol, is very often noted. At Seton Hospital, New York, nearly 90% of our advanced cases among the men were chronic alcoholics. The mode of living, whether indoors or out of doors, to what extent they are exposed to the elements, the kind and amount of food, and the occupation, are all questions, which, when answered, may be of value.

With reference to symptoms, past and present, we get most of our useful information. A history or presence of cough over any protracted period should demand a physical examination of the chest and a careful inquiry for further information. The causes of cough are familiar to all of us, but we must satisfactorily explain its presence before considering it of little or no importance. It is an easy matter for us to attribute cough to the stomach, especially if symptoms of stomach disorder are present, or to

bronchitis if we carelessly put our ear outside a man's clothes and hear a few sibilent rales, but both stomach disorder and bronchitis may be early symptoms of tuberculosis.

It may be well to consider here the sputum. For early diagnosis, I think I would consider this when my more important questions were answered. When sputum is present to any degree, we should always submit it to the usual examination for the tubercle bacillus. When we stop and think that in order to demonstrate the bacillus so many difficulties are in the way, it seems to me that the examination of sputum for early diagnosis is of little value. First, we have to have a broken down tubercle (which is not an incipient tubercle) discharging into an alveolus or bronchiole, then enough secretion to carry it into the larger bronchi, thence through its course to the mouth. The dilution is large by the time it is spread on the glass for examination. It is contaminated with secretions from nasopharynx and mouth; there is the difficulty in stain and then the question of the accuracy in the search. The chief difficulty, however, in demonstration is the fact that the bacillus is not often present in the sputum at this time.

How often we hear of the hard cold a year or so ago which hung on and then another cold a few months later, and so on, until the patient says that this time he can't get rid of it and that he is badly run down. A physical examination at this time will most often reveal, not incipient tuberculosis, but a moderately advanced condition. Frequent recurring colds are always suspicious and especially so with the slight cough in the interval.

Pleurisy, so called idiopathic, is to me tuberculosis, and I feel that this symptom more correctly belongs among the absolute signs. It may exist with or without effusion, with or without pain, dependent, somewhat, on the part of the pleura involved. Pleurisy may precede, accompany or follow a tuberculous process in the lung, so we should at least give it the importance that it deserves.

We should always question and examine for loss of weight. It is of importance if noted, but does not exclude tuberculosis if not observed.

Loss of appetite and impaired digestion may be early subjective symptoms.

Fever is usually present, but is most easily overlooked in practice. The patient may be seen when he has no fever; he may be examined when we expect fever and still not find it. Many

of the class from which we draw most of our tuberculosis patients cannot be under a two-hour observation, but by frequent records of temperature over a period of several days, we should be able to find it. Usually there is a slight rise of temperature in the afternoon or evening, with or without a subnormal temperature on the following morning. Emotion, worry, extraordinary exertion, physical or mental, and the menstrual period are very often accompanied or followed by a rise of temperature.

The pulse of early tuberculosis may be rapid and is generally of somewhat lower tension than normal. This lowered tension is rarely perceptible to the finger of the average practitioner. The character of the pulse is of value if other signs exist.

Haemoptysis is generally due to tuberculosis. It may be an early or late symptom. It may vary in amount from blood-streaked sputum to a quantity sufficient to cause death. Haemoptysis of early tuberculosis is rarely fatal.

Night sweats do not seem to me to be of much importance in early diagnosis. They are seen most often in the advanced cases and indicate a toxic state which may exist with many other conditions.

Dyspnoea is not a symptom of early tuberculosis in the majority of cases.

Pain in the chest may be observed early or may be absent throughout. It is usually associated with pleurisy and is sharp and stabbing in character. Neuralgia and myalgia sometimes occur.

There are many more relative signs and symptoms which are of minor importance and I shall not consider them here.

The absolute signs of pulmonary tuberculosis need no comment, except the subject of tuberculin, about which I feel that the average man in practice knows too little. This subject, I trust, will be considered separately.

The symptoms and history are known and observed by most of us, but I am certain, from what I have seen in my short experience, that our weakest point, as general practitioners, is in the ability to recognize abnormal physical signs and to translate into common sense what we find from a physical examination. The removal of all clothing to the waist and the familiarity with a stethoscope are indispensable. We must know the normal chest and normal physical signs, the abnormal chest with its physical signs, then acquire the ability to interpret what we find.

Inspection many times gives us decided information, but, as a rule, we derive little of value from inspection of the chest of the incipient. The phthisical chest, the diminished expansion and the minor observations sometimes noted, such as the red line along the gums, the yellow tongue after exclusion of malaria, mydriasis, dilatation of peripheral capillaries, diminished excursion of the diaphragm, club fingers and many others are merely features of interest after diagnosis has been made from the more important facts.

Percussion is of greater value to the expert than to the general practitioner. The art of percussing and the musical ear are necessary to detect the note slightly raised in pitch and the diminished resonance often observed in early apical tuberculosis. The possibility of recognizing these fine differences is with most of us, but through lack of experience the ability is wanting.

Auscultation is of greatest importance in recognition of physical signs. Know well the normal ratios in length and pitch of inspiration and expiration and listen carefully for any alteration. Higher pitched and roughened inspiration and prolonged expiration, or simple diminished breathing are significant signs. Rales are the most important physical sign. Many times they are not heard, either because the listening ear is not educated or that they are not properly and carefully looked for. I can in no better way express my ideas about rales and the necessity of cough to produce, or bring them out, than to quote from Dr. Lawrason Brown's paper read in Troy in December. He said, "The next step is to make the patient cough. This cough should be a free, easy, expiratory cough as noiseless as possible and followed at once by a full, fairly rapid inspiration. Rales that can be heard in no other way are often so apparent after cough that diagnosis becomes child's play." We should carefully listen to both chests and compare vocal resonance and especially whispered resonance.

Palpation and mensuration seldom give us important data.

It is very true that in many cases incipient tuberculosis exists with no physical signs, but I think the failures to recognize the disease early, are, as a rule, due to the inability to recognize the physical signs when they exist. Mistakes in diagnosis are excusable, but ignorance in diagnosis on a subject of such importance to the welfare of the world is unpardonable. There is

no reason why each man in general practice should not become expert on this subject.

In conclusion, I wish to lay emphasis on the scarcity and unimportance of the absolute signs and the many relative signs which, with the increasing importance given to this disease, are rapidly becoming absolute as a symptom-complex.

Editorial

I shall give no offence by adding that many things in the character and manners of Mr. Gideon Gray of Middlemas, in the Tale of the Surgeon's Daughter, were considered at the time by Sir Walter's neighbors on Tweedside as copied from Dr. Ebenezer Clarkson of Selkirk. "He was," says the Chronicler "of such reputation in the medical world, that he had been often advised to exchange the village and its meagre circle of practice for Edinburgh. There is no creature in Scotland that works harder, and is more poorly requited, than the country doctor, unless perhaps it may be his horse. Yet the horse is, and indeed must be, hardy, active and indefatigable, in spite of a rough coat and indifferent condition; and so you will often find in his master, under a blunt exterior, professional skill and enthusiasm, intelligence, humanity, courage and science." A true picture—a portrait from the life of Scott's hard-riding, benevolent, and sagacious old friend, "to all the country dear."

J. G. LOCKHART.

Narrative of the Life of Sir Walter Scott, Bart.



To this relatively common and usually overlooked condition attention is called by Dr. **Hernia in the** Linea Alba George Blumer, in a contribution to the *Yale Medical Journal* of July of the present year. The lesion suggests surgical relations, but presents important medical features, which Dr. Blumer has more especially emphasized. The importance of recognition of these herniæ is due not infrequently to the reflex or indirect symptoms, which lead to erroneous diagnoses of disease of other abdominal viscera, as gastric ulcer, cancer of the stomach, renal or hepatic colic, and even appendicitis.

These herniæ usually appear at some point between the ensiform cartilage and the umbilicus, sometimes between the latter and the symphysis. They occur occasionally in infancy, and may be congenital, but this incidence is rare, and they are not often found before the eighteenth year or in old age. As they appear during the years of greatest physical strength, and more frequently in men, the etiology, as might be expected, is essentially traumatic. In many cases there is a distinct history of the sudden onset of the hernia after an unusual exertion or strain, either a direct blow, or coughing, or lifting. There are two distinct forms of rupture: in one class of cases the protrusion is composed entirely of fat, so that the condition has been diagnosed as lipoma, and is, in fact, a lipoma originating from the properitoneal fat; and in the second class, there is a true hernia, having a distinct sac and definite contents. Clinically the character of the hernia is unimportant. When a sac is present the contents consist of portions of the intestine in only a small proportion of cases. A little over one-half of the entire number belong to the fatty variety and may be called properitoneal hernia. A little less than one-half contain omentum. The remaining few either contain intestine or have an empty sac. Occasionally the herniæ are multiple. An important peculiarity is the small size, so that detection, particularly in fat people, is difficult. They are usually about the size of a pea, a bean or a cherry, but the severity of the symptoms has no relation to the size of the hernia.

The symptoms vary. In about one-third of the cases the patient is unaware of the lesion until it is accidentally discovered by the physician during a routine examination. This latency may exist for years, but may be followed by distinct manifestations. Some patients suffer occasional attacks of pain, and the mass is tender. About one-half of the patients present marked symptoms. These are referred to the neighborhood of the hernia or to the gastro-intestinal tract, with occasional constitutional manifestations, as dizziness and headache and fever. The most frequent symptom is pain. This usually occurs in paroxysms, is of a colicky nature, and is apt to follow exertion, severe attacks of coughing, or the ingestion of food, especially of a large meal of solid food. The pain is usually increased by pressure over the epigastric

region, is most marked at the site of the hernia, and may radiate to the back, around the thorax in a girdle, to the spinal column, to the shoulder blades, and even down the arms. The position of the patient may have considerable bearing upon the severity of the pain, as this may be relieved by the dorsal, and exaggerated by the upright position. Anorexia, nausea and vomiting frequently accompany the pain, and the attack may last a few hours or may continue for days. Between the attacks many of the patients are constipated; some of them have symptoms suggesting gastric hyperacidity; still others appear neurasthenic, hysterical or hypochondriacal.

Examination of the patient at the time of the attack usually shows on inspection a visible tumor, although this may disappear when the patient is recumbent. Palpation gives in most instances the sensation of a mass of fat. Sometimes there is a considerable degree of motility beneath the skin, when there is a long pedicle. The presence of intestine is indicated by gurgling on reposition. A point which may mislead in the diagnosis is the fact that in something over twenty per cent. there are definite changes in the gastric juice, and sometimes definite physical changes in the stomach itself.

As regards treatment, it may be said that patients occasionally recover under palliative measures, as the application of bandages and trusses. The radical operation is so simple and satisfactory that it is much to be preferred. A mere linear incision over the mass with removal of the nodule of fat, if it happens to be a properitoneal hernia, or excision of the sac if it is a true hernia, is all that is necessary.

Little Biographies and the Eponymic Diseases

XXXII. GASPARD TAGLIACOZZI

THE study of a graveyard epitaph is sometimes interesting, but occasionally a bit gruesome. The study of the record of a man's life is as that of an epitaph, a little more full perhaps and doubtless much more true.

As one reads the rather fragmentary story of the subject of this brief sketch, one is impressed by the fact that in Gaspar Tagliacozzi the world once knew a man who, though somewhat of a theorist, was also practical, and above all was a thorough student, well abreast of the learning of his time if not actually ahead of it.

Tagliacozzi is a man of many names, for we find him variously called Taliacot, Taliacotius, Taglicozzi, Tagliacozzo and Tagliaguerso. His given name all seem to agree upon as Gaspar or Gaspard.

He was born of humble parents in the year 1546 in Bologna; his father being a manufacturer in that city. As to the date of his death his historians are somewhat at variance, though the majority agree upon the 7th of November, 1599, and state that he was buried in the church of the monks of Saint Jean-Baptiste. Of his early days we only know that he was educated in the schools of his native city and later that he studied under Cardan, or Cardanus, professor of anatomy in the University of Bologna, from which in 1570,—at the age of 24—he received the degree of Doctor of Philosophy. Shortly after receiving his degree he was appointed to a professorship in surgery and anatomy in the university—a position which he held for many years, becoming famous through his teachings and particularly through his treatment of lesions of the ears and mouth and more especially his plastic operations upon the nose. It is because of this work that he has come down to us as one of the leading Italian surgeons of his time.

That Tagliacozzi was not the first to practice the art of plastic surgery of the face there seems to be no doubt, for according to the record of M. de Haller, a certain P. Ronzanus, Bishop

of Tuscany, gives that honor (T. VIII, *Annals of the World*) to Branca or Brancas, a surgeon of Sicily, who in 1442 is said to have performed an operation of this character and who was followed in turn by Antoine, his son, who perfected the method and operated upon a number of cases of deformity of the ears and lips. Vincent Vianeus, or Vianeo, a surgeon of Calabre, is cited by this same author as being the inventor of a method for restoring the nose.

Tagliacozzi himself does not claim absolute originality in this branch of surgery, as is shown by the references in his work to Galien, Celse, and Paul of Aegina, his predecessors; and to Benedetti (Alexander Benedictius?), André Vesale, Paré and others of his contemporaries. Incomplete records from the writings of each of these men are still extant and it would appear that at about this period the general attention of the surgical world had been attracted to the possibilities of plastic surgery.

That which the world owes to Tagliacozzi is the credit of having published a most complete and systematic treatise on the subject of plastics of the face—a work which even to-day may be read with interest and profit.

His first communication seems to have been a letter to Hieronymus Mercuriale—appearing in this author's work entitled "De decoratione" (Frankfort, 1587) under the heading "Epistola ad Hieronymum Mercurialem, de naribus multo ante abscissis, reficiendis."

His great work was published at Venice, in folio form, in 1597, and republished in octavo, under a different title, the following year at Frankfort, one year before the death of the author. This work was written in Latin and was in two volumes, the first of twenty-five chapters and the second of twenty, followed by twenty-two wood-engravings and a table of contents.

The title of the first edition is: "De curtorum chirurgia libri duo, in quibus ea omnia quae ab hujus chirurgiae narium scilicet, aurium ac labiorum per insitionem restaurandorum cum theoricen, tum practicen pertinere videbantur, clarissimo methodo cumulatissime declarantur. Additis cutis traducis, instrumentorum omnium, atque deligationum iconibus (et?) tabulis."

The title of the Frankfort edition is given as: "Chirurgia nova de narium, aurium, labiorumque defectu, per insitionem cutis ex humero, arte hactenus omnibus ignota, sarciendo," etc.

In accordance with the style of the time, the writings of Tagliacozzi are verbose and long drawn out. In his earlier chapters he enters into a discussion of the various parts of the face with reference to their dignity and importance, citing the authority of doctors, orators, poets and even that of the fathers of the church, and he goes on to say, that according to Josephus, in certain countries they chose for king the man having the largest nose—the nose being indicative of character and ability. “*Nasus ergo tantae est existimationis, ut ex ejus decore ornatuque summa sacerdotia, amplissima imperia et regna latissima pendere videantur.*” He then takes up the work of his predecessors and compares their method of treatment with his own. He gives various means of substituting new parts to the face to replace those lost through accident or disease and says that these operations in surgery are in reality analogous to the well known methods of farmers and husbandmen in grafting trees and shrubs.

It is not, he says, to give back the color, the fleshy parts, or the hair and other attributes of beauty and comeliness, but rather the members which one has lost by accident and which one must have to carry on the necessary functions, and for this reason in my operation I consider the useful rather than the ornamental.

In considering the limitations and the possibilities of the operation he discourages any attempt to graft cartilage or bone and advises the use of the skin alone as the tissue most likely to give satisfactory results. He classifies the varieties of skin and gives preference to that obtained from the arm above the elbow, rejecting that of the hands and feet as dangerous to the life of the patient, that of the cheeks as too muscular and that of the forehead as too difficult to use for repair of any other feature than the nose. He advises the use of too large a piece as against too small a one, since it is much better to have a large nose than a small one—“*minus enim malum est amplius gestare nares et prolixas—quam imminutas et deformes.*”—and says that in such cases (when skin of the forehead has been used?) it is not rare for the patient to be obliged to shave the nose.

He advocates the use of a flap of skin from the arm, the limb being held in position by bandages until union of the approximated edges has taken place, and he questions the advisability of using the skin of another person, for though he does not doubt that such a method might succeed yet he thinks it practically

impossible to approximate two people in a sufficiently perfect state of immobility, for a sufficient time, to assure union of the two tissues. Following this he discusses the age, the constitution and state of health of the patient, as well as the season and even the hour for operation from which the surgeon may expect the best results.

He describes his operation, giving a list of the necessary instruments and apparatus and reporting many cases in support of his method. Though the text is full on this subject, yet it is somewhat obscure and confused and a much more accurate idea may be obtained from the excellent plates found at the end of the second volume, where one sees not only pictures of the instruments and appliances but also illustrations of patients before and after operation.

Operations following or based upon this method, at one time appear to have been widely practiced in Italy and to have enabled many surgeons to cover themselves with glory, if one may judge from the writings of the pupils and followers of Tagliacozzi, who often were loud in their praise of their master and his work. Thomas Fienne, or Fyens, a pupil of Tagliacozzi, wrote of the manifest advantage of the method and reported many marvelous cures. Among those of a later period, P. A. Molinetus in his work on "*The Five Senses*," reports a case operated upon by this method in 1625, and Fortunatus Licetus ("*de monstribus*," II, 9); Purmann in his German work "*Lorberkranz*;" and M. de Réaumer ("*Histoire de l'académie des Sciences*," p. 37), have discussed the method and spoken of its advantages.

It appears, however, that though the method may have been in favor in Italy it had scarcely any recognition in other parts of Europe, for with the exception of a certain Griffon, or Grison, of Lausanne, who repaired a nose by this method in 1852—as reported by Fabrice de Hildan (C. III ob. 31, ep. 62), scarcely another example may be cited outside of Italy, most of the surgeons of other countries confining themselves to a dispute upon the possibility or impossibility of Tagliacozzi's method. Even among the Italians there were some who rejected the method as impracticable; and Della Croce, who in 1612 filled the chair of medicine at Rome, spoke of the thing as absurd and ridiculous. One is able to judge what was thought of it in other parts of Europe from a passage in the "*Institutiones Chirurgicales*" of Heister who in 1739 wrote that when one had the

misfortune to lose his nose the best way of replacing it was by obtaining one of wood or silver—and this work of Heister's was for half a century considered the authority on surgery.

An amusing story told in this connection is that the celebrated van Helmont in answering an antagonist of the method, who attributed the success of the operation in great part to the Devil, cited the case of a certain man of Brussels, who having lost his nose in a battle, obtained another from the arm of a laborer at Bologna. He was very proud of his new acquisition but when at the end of three months he suddenly felt his nose to grow cold and fall off in a state of putrefaction, he was greatly astonished and demanded an explanation from Tagliacozzi—who informed him that at the very hour when his nose fell off at Brussels, the unhappy laborer who had furnished it, had drawn his last breath at Bologna.

The work of Tagliacozzi and his pupils had almost been forgotten, when, in 1794, an account appeared in the *Gentleman's Magazine* of a marvelous result obtained at Kumar, near Prunah, the details of which had been transmitted through the *Hircarrah*, the Gazette of Madras. A Mahratte in the service of an Indian Company, having lost his hand and nose in the prisons of Tippon-Saïb, rejoined in this condition, the forces of Bombay at Seringapatam, where he found an Indian surgeon who took it upon himself to replace the nose by means of a flap of skin taken from the forehead. The success of the operation once more aroused interest in this line of surgery, the works of older surgeons were again brought to light and many new methods or modifications of old methods were advanced and warmly championed by their respective admirers. Perhaps it may be of interest to refer briefly at this point to the three general or fundamental methods underlying all operations in plastic surgery. These are known as the French, the Indian and the Italian methods, and their chief points are as follows.

In the French method the tissue for the repair is taken from a point near the defect and is slipped into position with only a slight traction on the pedicle.

The Indian method differs in that the tissue for the repair is taken from a point a little distant from the defect and is brought into place by being twisted upon its pedicle, often being lifted across an intervening strip of undisturbed skin.

The Italian method of repair is that in which the tissue is taken from some part of the body, perhaps at quite a distance from the defect, and is held in approximation by sutures and bandages for some days before the secondary operation of cutting the pedicle is done.

Thus you will see that Tagliacozzi may be called the originator of the Italian method, and the operative procedure to which Graefe has pompously given the name of the German method is in reality the Taliacotian method with some slight modifications.

That Tagliacozzi was not without honor in his own country is shown by the fact that the University of Padua erected a statue to him and that another statue was placed by the Faculty of Medicine in the amphitheatre of anatomy of the University of Bologna,—the figure of Tagliacozzi holding a nose in his hand. Beneath is the very honorable inscription:

D. O. M.

Gaspari Taliactio Civi Bononiensi, Philosopho ac Medico aetatis nostrae celeberrimo, Cum universam humani corporis Anatomen in doctissimorum virorum frequentissimo conventu publice administratum, facundia, methodo ac doctrina admirabili explicarit; ejusquae incomptas adhuc partes in lucem prodierit; animi grati et perpetuae memoriae ergo; Lect. Medicique pp. Ordinariae Anatomes ab illo administratae Monumentum.

T. F. RIGGS.

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Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

BUREAU OF VITAL STATISTICS FOR JUNE, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption.....	19	15	17	13	21
Typhoid Fever.....	2	1	1	0	0
Scarlet Fever.....	0	0	1	1	1
Measles.....	0	2	0	0	1
Whooping-cough.....	0	0	1	0	1

	1904	1905	1906	1907	1908
Diphtheria and Croup.....	0	2	11	4	3
Grippe.....	0	1	1	0	0
Pneumonia.....	4	2	6	5	6
Broncho-pneumonia.....	2	2	4	2	2
Bright's Disease.....	19	14	10	9	14
Apoplexy.....	5	5	4	5	6
Cancer.....	12	8	5	5	10
Accidents and Violence.....	8	7	6	8	8
70 years and over.....	18	18	26	23	20
Deaths under one year.....	10	13	15	19	9
Total deaths.....	118	109	137	126	119
Death rate.....	14.34	11.93	16.60	15.32	14.47
Death rate less non-resi- dents.....	12.77	10.51	15.20	12.52	12.76

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital.....	12	7	3	6	10	7	10	9	6	5
Albany County Jail.....	0	0	0	1	0	0	0	0	0	0
Albany Orphan Asylum....	0	0	1	0	1	0	0	1	0	0
County House.....	12	2	1	0	4	0	2	2	2	7
Homeopathic Hospital.....	0	2	2	1	1	0	0	0	1	1
Hospital for Incurables.....	0	0	0	0	1	0	0	0	1	0
House of Shelter.....	0	0	0	0	0	0	0	0	0	0
House of Good Shepherd...	0	0	1	0	0	0	0	0	0	0
Home for Friendless.....	0	0	1	1	2	0	0	0	1	0
Home for Aged.....	0	0	0	0	1	0	0	0	0	0
Little Sisters of the Poor..	1	0	0	0	0	0	2	2	2	2
Public Places.....	3	0	1	2	2	0	0	2	2	0
St. Margaret's House.....	0	0	2	0	2	1	1	1	0	0
St. Peter's Hospital.....	2	2	4	2	7	3	6	2	6	3
St. Vincent's Male Orphan Asylum.....	0	0	0	0	0	0	0	0	0	0
Births at Term.....	116									
Marriages.....	2									
Still Births.....	2									
Premature Births.....	2									

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were 184 inspections made, of which 120 were old houses and 64 new houses. There were 72 iron drains laid, 25 connections to street sewers, 28 tile drains, 63 cesspools, 4 urinals, 79 wash basins, 92 sinks, 78 bath tubs, 59 wash

trays, 11 trap hoppers and 103 tank closets. There were 126 permits issued, of which 107 were for plumbing and 19 for building purposes.

There were 27 plans submitted, of which 5 were of old buildings and 22 of new buildings. 20 houses were tested, 13 with blue or red and 7 with peppermint and there were 26 water tests. 59 houses were examined on complaint and 112 were reexamined. 34 complaints were found to be valid and 25 without cause.

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive.....	4	9	30	25	16
Initial Negative.....	14	13	39	28	41
Release Positive.....	1	0	23	52	19
Release Negative.....	6	9	61	108	75
Failed.....	0	0	29	16	6
Totals.....	25	31	182	229	157
Examination for tuberculosis:					
Initial Positive.....	....	....	....	4	4
Initial Negative.....	....	....	....	30	13

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid fever.....	4	4	1	2	5
Scarlet fever.....	26	6	17	16	46
Diphtheria and croup.....	7	17	47	41	13
Chickenpox.....	1	1	4	8	9
Measles.....	6	32	2	18	23
Whooping-Cough.....	0	3	1	0	0
Consumption.....	1	0	2	17	29
Totals.....	45	63	74	102	125

Contagious Diseases in Relation to Public Schools.

	<i>Reported</i>		<i>Deaths</i>	
	D.	S. F.	D.	S. F.
Public School No. 4.....	..	1	..	..
Public School No. 5.....	..	4	..	..
Public School No. 6.....	1	..	..	..
Public School No. 10.....	1	..	..	..
Public School No. 14.....	1	..	..	..
Public School No. 17.....	..	2	..	..
Public School No. 22.....	..	1	..	..
Public School No. 24.....	..	1	..	..

	Reported D.	S. F.	D.	Deaths S. F.
St. Joseph's Academy.....	..	2	..	..
St. Patrick's School.....	..	1	..	..
Number of days quarantine for diphtheria:				
Longest..... 33	Shortest..... 13	Average.....	20	
Number of days quarantine for scarlet fever:				
Longest..... 61	Shortest..... 13	Average....	30	62-90
Fumigations:				
Houses..... 109	Rooms.....		438	
Cases of diphtheria reported.....				13
Cases of diphtheria in which antitoxin was used.....				12
Cases of diphtheria in which antitoxin was not used.....				1
Deaths after use of antitoxin.....				2

MISCELLANEOUS.

Inspections of mercantile establishments.....	0
Mercantile certificates issued to children.....	36
Factory certificates issued to children.....	16
Children's birth records on file.....	52
Number of written complaints of nuisances.....	79
Privy vaults.....	7
Plumbing.....	30
Other miscellaneous complaints.....	42
Total number of dead animals removed.....	734
Cases assigned to health physicians.....	65
Calls made.....	229

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD—DEPARTMENT OF VISITING NURSING—STATISTICS FOR JUNE, 1908. Number of new cases, 163; *Classified as follows*: Dispensary patients receiving home care, 11; district cases reported by health physicians, 8; charity cases reported by other physicians, 65; moderate income patients, 79; old cases still under treatment, 64; total number of cases under nursing care during the month, 227. *Classification of diseases for the new cases*: Medical, 35; surgical, 22; gynecological, 3; obstetrical under professional care: mothers, 51; infants, 47; eye and ear, 2; skin, 2; throat and nose, 1; contagious diseases in the medical list, 4; removed to hospital, 11; deaths, 5.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; medical students in attendance, 3; guild nurses in attendance, 5; patients, 3; visits by head obstetrician, 3; visits by attending obstetricians, 8; visits by students, 15; visits by nurses, 21; total number of visits for this department, 46.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,360; for professional supervision of convalescents, 465;

total number of visits, 1,825. Cases reported to the Guild by three health physicians and thirty-six other physicians. Seven graduate nurses and four assistant nurses on duty.

STATISTICS FOR JULY, 1908.—Number of new cases, 134; *Classified as follows*: Dispensary patients receiving home care, 9; district cases reported by health physicians, 9; charity cases reported by other physicians, 58; moderate income patients, 58; old cases still under treatment, 53; total number of cases under nursing care during the month, 187. *Classification of diseases for the new cases*: Medical, 41; surgical, 10; gynecological, 2; obstetrical under professional care: mothers, 42; infants, 37; eye and ear, 2; skin, 0; throat and nose, 0; contagious diseases in the medical list, 5; removed to hospital, 4; deaths, 8.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 3; medical students in attendance, 4; Guild nurses, 7; patients, 4; visits by head obstetrician, 3; visits by attending obstetricians, 4; visits by students, 51; visits by nurses, 91; total number of visits for this department, 149.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,288; for professional supervision of convalescents, 270; total number of visits, 1,558. Cases reported to the Guild by two health physicians and thirty-seven other physicians. Six graduate nurses and four assistant nurses on duty.

REVISION OF INTERNATIONAL CLASSIFICATION OF CAUSES OF DEATH.—The International Classification of Causes of Death, which is intended for the purposes of morbidity and hospital returns as well as for mortality statistics, will be subjected to its second decennial revision next year. This system, formerly known as the "Bertillon system," was recommended by a committee of the International Statistical Institute during its session at Chicago in 1893. It was urgently recommended for adoption by the American Public Health Association, representing the sanitary authorities of Canada, Mexico, and the United States, in 1898. In the first revision, held at Paris in August, 1900, representatives of twenty-six countries participated. It is employed by the United States Bureau of the Census, by all registration states, and by nearly all registration cities in the United States. Every country in North and South America has adopted it, and it is used by Japan, and by France, Spain, Holland, Belgium, Greece, Bulgaria, and other European countries. It has also recently been adopted, after careful comparison with the system formerly in use, by the Bureau of Census and Statistics of the new Commonwealth of Australia.

At the recent meeting of the American Medical Association at Chicago, the House of Delegates unanimously resolved "That the International Classification of Diseases and Causes of Death be recommended for all official morbidity and mortality statistical reports." A special committee, whose chairman is Dr. Frank P. Foster of New York, is preparing recommendations for submission to the International Commission of Revision, and committees have been appointed by the various sections of the Association and by national organizations, such as the American Academy

of Medicine, the American Medico-Psychological Association, and others, to co-operate with the Association's committee. The subject of classification was made a special topic at the session of the Section on Vital Statistics of the American Public Health Association held at Winnipeg, Manitoba, August 25-28, 1908.

It was proposed in the resolutions adopted by the American Medical Association at Chicago, that inquiry be made as to the possibility of holding the meeting for revision at Washington in 1910, in connection with the International Congress of Hygiene and Demography, but the preliminary announcement just issued by Dr. Bertillon, at the request of the Ministry of Foreign Affairs of the French Government, indicates that the year 1909 has been chosen, largely to facilitate the use of the revised classification in connection with the mortality statistics of the census year 1910 in the United States. This action should be greatly appreciated, and all registration officials, health officers, hospital physicians, and the profession generally should co-operate so that the results of the revision will be thoroughly satisfactory for use in this country during the next ten years. Many suggestions from American physicians were incorporated in the first revision, but the progress of medical science and the test of practical use will indicate changes that are desirable. The system may be examined in the annual reports on mortality statistics, published by the Bureau of the Census, as well as in the registration reports of many states and cities. Copy of a pamphlet on "Relation of Physicians to Mortality Statistics," containing an outline of the classification, will be sent by the Director of the Census to any physician upon request, and I shall be pleased to receive any suggestions for the revision of the classification, which I will submit to the co-operating committee and to the International Commission.

ASSISTANT SURGEON, FREEDMEN'S HOSPITAL.—The United States Civil Service Commission announces an examination on September 2-3, 1908, at the places mentioned in a list printed, to secure eligibles from which to make certification to fill a vacancy in the position of first assistant surgeon (male), Freedmen's Hospital, at \$1,500 per annum, and vacancies requiring similar qualifications as they may occur at that hospital.

The examination will consist of the subjects mentioned below, weighted as indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. Letter-writing	5
2. Anatomy and physiology.....	10
3. Surgery and surgical pathology.....	20
4. Chemistry, materia medica, and therapeutics.....	5
5. Bacteriology and hygiene	5
6. Theory and practice of medicine and general pathology..	25
7. Obstetrics and gynecology	15
8. Experience (practice)	15
Total	100

Applicants will be given credit for practical experience according to length and character. Maximum credit will be given only to those who have had three or more years' experience in private practice or two years' experience in hospital work or dispensary service.

The examination will be divided as follows: First day, first four subjects; second day, remaining subjects.

Age limit, 20 years or over on the date of the examination.

This examination is open to all citizens of the United States who comply with the requirements.

The Freedmen's Hospital is an institution for the treatment of colored patients, and it is understood to be the practice of the Department to appoint only colored persons to positions therein.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed hereon, for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

SUGGESTIONS TO PROTECT SCHOOL CHILDREN'S EYES.—At a recent meeting of the Women Principals' Association of New York City and prominent ophthalmologists of that city, the following suggestions were approved:

"1. That hereafter no calendared or coated paper be permitted in the text-books given to the children, as the dazzle of such paper is injurious to their eyes.

"2. That half-tone pictures be not permitted in school books, but that simple, easily-seen, outline pictures be substituted for them.

"5. That in reading the children hold their books at an angle of approximately 45 degrees, and that in oral reading they be required to look up frequently.

"6. That after a lesson demanding close work the children be asked to look up at the ceiling or out of the window to change the focus of their eyes and rest the muscles of accommodation. * * *

"8. That in the first two years of school all writing be upon blackboards instead of upon paper. * * *

"11. That electric bulbs used in lighting classrooms be made of frosted glass and that clusters of such bulbs be provided with pale amber shades to screen the pupils' eyes from the direct rays of light."

INTERESTING FEATURE OF THE COUNTY FAIRS.—An unusual feature of the county fairs this year will be the "Tuberculosis Exhibit," prepared by the State Charities Aid Association of New York. It will demon-

strate by pictures, literature and photographs, making it both interesting and instructive.

AMERICAN MEDICAL MISSIONARY COLLEGE.—This college, which accepts as students only those who expect to devote their lives to missionary work, has issued its annual announcement and catalogue. Graduates from this institution have a creditable showing before State Boards.

CARNIVAL OF ALLIED CHARITIES.—The carnival recently held at Altro Park for the benefit of St. Margaret's House, Hospital for Incurables, Guild for the Sick, and two similar worthy causes in Troy, netted over \$3,500.

CIVIL SERVICE EXAMINATIONS—STATE AND COUNTY SERVICE—SEPTEMBER 5, 1908.—Open competitive examinations for the State and county service will be held in various cities throughout the State September 5, 1908, for the position mentioned below. This examination covers positions in the classified service in the State departments and institutions, and in the various county departments and institutions of the counties of Albany, Erie, Kings, Monroe, New York, Onondaga, Queens, Richmond and Westchester. Appointments to positions in the county service will be made when practicable from the general eligible lists for the State and county service, residents of the county being preferred for such appointments: Assistant Physician, Rome State Custodial Asylum. \$600 to \$900 and maintenance. Open only to men who have graduated from a registered medical school and have completed all requirements for admission to the State examinations for license to practice medicine. At least six months' experience on the staff of a general hospital is desirable. Subjects of examination and relative weights: Written examination, covering anatomy, physiology, chemistry, materia medica, therapeutics, obstetrics, surgery, theory and practice, 8; education, experience and personal qualifications, 2.

PERSONALS.—Dr. C. H. MOORE (A. M. C., '88) has returned from a trip through Scotland, England, France and Holland.

—Dr. GEORGE B. STANWIX (A. M. C., '98) is at 1170 Dean Street, Brooklyn, N. Y.

—Dr. GEORGE E. BEILBY (A. M. C., '99) has returned to Albany after a European trip.

—Dr. JOHN H. GUTMAN (A. M. C., '02) moved his office from Lancaster and Dove Streets to 198 Washington Avenue on September 1st.

—Dr. GUY C. LYON (A. M. C., '00) is at the Binghamton State Hospital.

—Dr. FRED S. LETTICE (A. M. C., '02) of Schenectady, N. Y., has been appointed physician at Sing Sing Prison at a salary of \$2,000 a year.

—Dr. W. A. KRIEGER (A. M. C., '06), after a year as resident physician Albany Hospital and a year as resident pathologist, has taken up practice in Poughkeepsie, N. Y.

DIED.—DEWITT CLINTON BEEBE, M. D. (A. M. C., '63); a member of the State Medical Society of Wisconsin; one of the most prominent citizens and physicians of western Wisconsin; surgeon of the Fourth New York Volunteer Cavalry during the Civil War; mayor of Sparta in 1904 and 1905; and postmaster from 1906 to the time of his death; died at his home July 4, from myocarditis, complicated with acute nephritis, after an illness of one month, aged 70.

—Dr. BERT. L. GOLDTHWAIT (A. M. C., '92); formerly of Troy, N. Y., died at Schenectady, June 17, 1908, aged 41.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The Blues (Splanchnic Neurasthenia), *Causes and Cure*. By ALBERT ABRAMS, A. M., M. D. (Heidelberg), F. R. M. S., Consulting Physician, Denver National Hospital for Consumptives, The Mount Zion and The French Hospitals, San Francisco; President of the Emanuel Sisterhood Polyclinic; formerly Professor of Pathology and Director of The Medical Clinic, Cooper Medical College, San Francisco. Illustrated, third edition, revised and enlarged. New York, E. B. Treat & Company, 241-243 West 23d St., 1908.

The demand for a third edition in practically as many years is sufficient testimony of the cordial reception accorded to this book. It is a rather unusual book, dealing with an important topic and written in a fascinating style. It contains much that is original and should not fail to stimulate thought and further study.

The main object of the author is to draw attention to a special form of neurasthenia which he designates "Splanchnic Neurasthenia." After a prefatory discussion of neurasthenia in general, its etiology, clinical manifestations and treatment, he takes up the main subject, *The Blues*. The chief symptoms of this affection, according to the author, are periodic depression and nervous prostration of variable duration and intensity, associated with abdominal sensitiveness, engorgement and tenderness of the liver and gaseous distention of the intestines.

The primary factor, averred to be operative in the causation of this disorder, is the plethora of the abdominal veins with the consequent stagnation of the blood favoring auto-intoxication. Normally the support of the abdominal walls, the vaso-motor control of the nerves, together with the suction effect of the respiratory act, are sufficient to maintain the equilibrium of the circulation. Should this mechanism, however, be disturbed through the laxity of the abdominal muscles or cardiac dilatation, then ensues the engorgement of splanchnic veins and the abdominal viscera.

Reasoning from these data he advocates therapeutic measures directed towards strengthening the abdominal muscles by various exercises, massage of the liver and respiratory gymnastics. The third edition contains also an appendix dealing with various topics, such as cardio-splanchnic phenomenon, different visceral reflexes, blood pressure, etc., which have more or less bearing upon the main subject discussed. N. A. PASHAYAN.

Adenomyoma of the Uterus. By THOMAS S. CULLEN, M. D., Associate Professor of Gynecology in Johns Hopkins University. Large octavo of 270 pages, with illustrations by HERMANN BECKER and AUGUST HORN. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$5 net; half morocco, \$6.50 net.

This work is based on the careful study of ninety cases of this condition. The material was obtained chiefly from the gynecological department of the Johns Hopkins Hospital and from Dr. Kelly's private sanitarium. The writer found this condition in 5.7 per cent. of 1,283 specimens of myoma examined from April 1, 1893, until July 1, 1906.

The early literature of the subject is first discussed and this is followed by a report of several cases, which constitutes the bulk of the work.

In the report of the cases, the clinical history is first given, then a description of the operation, gross appearance of the specimen removed and the result of the microscopical examination of pieces of tissue removed from the specimen. After the report of the cases the writer discusses, in separate chapters, the clinical picture of this condition, differential diagnosis, treatment, prognosis, origin and cause.

He divides adenomyomata into the following groups:

1. Adenomyomata in which the uterus preserves a relatively normal contour.

2. Subperitoneal or intraligamentary adenomyomata.

3. Submucous adenomyomata.

He believes that all adenomyomata of the uterus in which the glandular elements are similar to those of the uterine mucosa, and are surrounded by stroma characteristic of that surrounding the normal uterine glands, owe their glandular origin to the uterine mucosa, or to Müller's duct, no matter whether they be interstitial, subperitoneal or intraligamentary, whether solid or cystic.

Lengthened menstrual periods are the first symptoms. The flow gradually assumes the proportions of hemorrhages and eventually the period may become continuous. The menstrual period is usually associated with dysmenorrhœa. The writer believes that diffuse adenomyoma is the only pathological condition of the uterus which, as a rule, gives the following clinical picture:

1. The bleeding is usually confined to the period.

2. There is usually much pain, referred to the uterus, at the period.

3. There is usually no intermenstrual discharge of any kind.

4. The uterine mucosa is perfectly normal and may be rather thick.

The only way to control the bleeding is to remove the uterus and the prognosis for a cure is excellent.

The book-making is of the best, and many of the sixty-eight illustrations are among the finest in medical literature. To the gynecologist, pathologist and all others interested in adenomyomata this monograph with report of cases should prove interesting.

J. A. S.

The Practical Medicine Series. Comprising ten volumes on the year's progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume X. *Skin and Venereal Diseases, Nervous and Mental Diseases.* Edited by W. L. BAUM, M. D., HUGH T. PATRICK, M. D., WILLIAM HEALY, A. B., M. D. Series 1906, Chicago. The Year Book Publishers, 40 Dearborn Street.

The Practical Medicine Series. Comprising ten volumes on the year's progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume X. *Nervous and Mental Diseases.* Edited by HUGH T. PATRICK, M. D., Professor Neurology in the Chicago Polyclinic; Clinical Professor of Nervous Diseases in the Northwestern University Medical School; Ex-President Chicago Neurological Society. CHARLES L. MIX, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School; President Chicago Neurological Society. Series 1907, Chicago. The Year Book Publishers, 40 Dearborn Street.

These two handy volumes of the well-known series furnish an excellent resumé of the medical literature pertaining to the above specialties. The volume of 1906 deals with skin and genito-urinary diseases as well as those of the nervous system and the mind. The volume of 1907 is exclusively devoted to the latter topics. The editors deserve a great deal of credit for the judicious care they have exercised in sifting what was of real merit from a large mass of material and presenting it in a concise yet sufficiently full manner. The neuron theory, the different psycho-neuroses, organic brain, cord, peripheral nerve lesions are serially taken up and the best articles abstracted bearing upon their etiology, pathology, symptoms and treatment. The mental diseases, it seems to us, receive comparatively scant consideration, although not a few valuable papers have been contributed to modern Psychiatry.

N. A. PASHAYAN.

Syphilis: A Treatise for Practitioners. By EDWARD L. KEYES, JR., A. B., M. D., Ph. D., Clinical Professor of Genito-Urinary Surgery, New York Polyclinic Medical School and Hospital; Lecturer on Surgery, Cornell University Medical School; Surgeon to St. Vincent's Hospital. D. Appleton & Co., 1908.

A glance at the contents of this book fully justifies the author in presenting it to the medical profession. It is distinguished from most of the text-books that have appeared recently in that the views expressed are the author's own, based on his own private cases, some 2,500 in number.

While there doubtless will be many who will not accept some of the statements as correct, the value of the book loses nothing thereby. It is a simple statement of the conclusions arrived at after a logical consideration of the material gathered in a private practice.

In presenting the questions concerning syphilis which are still unsolved, such as paternal heredity, reinfection, etc., the arguments and theories of both sides are given impartially.

The results of the newer studies—the *Spirochaete Pallida* and experimental inoculations—are clearly reviewed.

The first portion of the book deals with the general considerations of the disease. The chapter on syphilis in relation to public health is worthy of close attention, for it emphasizes an aspect of this disease too long neglected. The chapter on diagnosis brings out one point in particular—the fallacy of attempting to diagnose syphilis by the character of the initial lesion. This of course is manifestly impossible, yet there are still many physicians who feel warranted in instituting constitutional treatment, relying on their ability to do this. The newer modes of treatment are clearly outlined and the respective value of each is discussed. The relation of potassium iodide and mercury to syphilis and the indications for the use of each will clear up much confusion that exists among physicians regarding these two drugs.

The latter half of the book is given over to a description of the skin lesions and syphilis of the organs and systems.

The making of the book is beyond criticism. We can recommend this book without reservation. It can be read by any physician with profit.

H. W. C.

Gonorrhea: Its Diagnosis and Treatment. By FREDERICK BAUMANN, Ph. D., M. D., Professor of Genito-Urinary Diseases in the Reliance Medical College, and Instructor in Dermatology and Venereal Diseases in the College of Physicians and Surgeons, Chicago. D. Appleton & Co., 1908.

In the preface the author states that this book is intended to be a concise digest of the diagnosis and treatment of gonorrhea for the use of the students in his clinic. In its preparation he has adhered to the teachings of Oberlaender and Kollmann.

There are a few points in the text which seem worthy of comment, in that they are perhaps contrary to the views generally accepted.

In the diagnosis of chronic gonorrhea considerable space is given to the use of the endoscope. While this instrument is of undoubted value in the hands of an expert with much experience, it seems that too much importance has been placed on this method of diagnosis in a book intended for the use of students. The same applies also to the use of instruments in general; the impression the student must get is that without a complete set of Kollmann's four-ply dilators there is little to be done for the relief of chronic inflammations of the genito-urinary tract.

The treatment of acute gonorrhea by rest in bed and irrigations twice daily are not practical, simply because patients will not follow such instructions. To have a patient report daily except in dispensary practice is seldom possible.

The use of nitric acid in 1-10,000 or 1-20,000 solution as an irrigating fluid in acute gonorrhea may produce satisfactory results in the author's clinic, but it is safe at least to say that this is not a widely used solution for this purpose. To force such a solution into the bladder after washing out the anterior urethra we do not think a safe treatment for students to practice, despite the author's success in avoiding infection.

The book seems crowded with details and emphasis is laid on what apparently are the ideas of one or two men rather than a review of the methods in more general use.

While this may be a proper book for the students of this clinic, we hesitate to recommend its use to students elsewhere. H. W. C.

PSYCHIATRY

Edited by G. Alder Blumer, M. D.

Focal Symptoms in Idiopathic Epilepsy. (*Über Herderscheinungen bei genuiner Epilepsie.*)

O. BINSWANGER. *Monatsschrift für Psychiatrie und Neurologie*, Band XXII, Heft 5, November, 1907.

Epilepsy belongs among the constitutional psycho-neuroses, and has a limited and determined symptomatology, characterized by general convulsions with loss of consciousness, or partial manifestations of this kind, frequently with mental anomalies substituted for the convulsions, or associated with them. Organic diseases of the brain (diffuse, lobular and miliary sclerosis, or gliosis, encephalitis, porioencephalitis, softening, cysts, etc.) accompanied by epilepsy; toxic (alcohol, lead), traumatic, syphilitic epilepsy, senile epilepsy, and reflex epilepsy are not to be regarded as the idiopathic affection. But the minute organic changes in the cortical nerve or glial cells or fibres found by several investigators in recent years, notably Alzheimer, may reasonably be regarded as the result of the prolonged chemical injuries which are assumed as incident to the disease. In individual cases, particularly those following an en-

cephalitic focus developed during the embryonal period, which may in later life practically disappear, the differentiation between organic and idiopathic states may be exceedingly difficult. And again there is no doubt that focal symptoms may appear in the course of true epilepsy which need to be differentiated from the Jacksonian form.

Focal symptoms of true epilepsy appear (a) as the aura, and (b) as participants of the convulsive phase of the attack. The aura is seen only occasionally (a) in the fully developed typical attack—instantaneous and complete loss of consciousness, and universal tonic followed by clonic spasm; more frequently (b) in the more slowly developing atypical seizure—slow, spreading, gradual overwhelming of the cortex eventuating in complete unconsciousness; the tonic spasm likewise developing slowly, and anticipating the loss of consciousness, and the clonic spasm commingling with the tonic phase. In other cases the convulsive seizure begins with interrupted spasm and general or partial tonic spasms follow, most frequently (c) in rudimentary attacks with only a slight tonic and clonic seizure in the convulsive stage with complete unconsciousness; and (d) in abortive attacks, in which the convulsive movements are only suggested, with momentary suspension of consciousness, or the attack consists in slight disturbance of consciousness, with transient motor discharge.

The motor aura of true epilepsy exhibits the following forms: *circumscribed*, as (a) clonic spasm of a segment of a limb or a definite muscle-group; (b) as circumscribed tonic spasm of a part of a limb, or an extremity, or a certain region of the body (tongue and jaw muscles, neck and trunk regions, with spasm of the eye muscles); (c) *specialized locomotor movements* (twisting of the trunk, backward and forward movements of the upper part of the body, arrhythmic striking, and pushing motion of a limb); (d) *co-ordinated automatic movements* (as injury and rubbing—*aura cursativa*). Another local symptom of value consists of the effects of an initial discharge in definite areas of the motor cortex—the “motor signals” of Séguin and Winkler. These cases may be differentiated from Jacksonian epilepsy only by careful study of the history and by long observation. It is only when the most careful investigation of the early period of the attack reveals the absence of focal symptoms (motor weaknesses, disturbance of co-ordination, diminished tactile sensibility, disturbance of muscle sense) that an organic lesion may be excluded. In genuine epilepsy the motor aura is rapidly merged into the state of unconsciousness, whereas in Jacksonian attacks the loss of consciousness develops slowly and is first seen when the spasm has extended to numerous muscle groups. Paresis limited to groups of muscles and immediately following the spasm is reasonably definite evidence of organic epilepsy. In the latter these motor auras and their effects (paresthesiæ and post-paroxysmal paresis) are usually persistent in the same groups, whereas the aura in true epilepsy presents no such exact regularity.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

The Treatment of Acute Pneumonia. SAMUEL WEST, with discussion at the Harveian Society. *The Practitioner*, April, 1908, p. 429.

The pneumococcus is so easily destroyed outside the body it is remarkable that it is so frequently found in the mouth of healthy persons. Although pneumonia is of bacterial origin, it is not infectious, and notwithstanding the fact that epidemic, house, or room pneumonia has been described, our knowledge of the natural history of the germ and its mode of propagation is defective. While figures seem to prove the assertion that the disease is increasing in frequency and fatality in America, it is not true of Great Britain. Usually when cases of pneumonia are unusually frequent it can be explained by an outbreak of influenza, the mortality curve for the two diseases being so similar that the fluctuation in the former disease is entirely explained by the outbreak of the latter.

The general treatment should be divided into: *prophylactic*, *anti-bacterial*, and *symptomatic*.

Prophylactic.—So little is known of the conditions which determine an attack of pneumonia that a large measure of our prophylaxis consists in keeping the powers of resistance at the highest possible point. Exposure to cold and specific diseases, especially measles and influenza markedly lower resistance and thus predispose. Great care should be exercised in the post-febrile depression following influenza, while in measles the greatest danger is during the febrile stage. As the infection is probably from the mouth, the latter should be carefully and systematically cleansed and disinfected. One attack of pneumonia, because of the influence of the toxines, is also predisposing.

Anti-bacterial.—Here we endeavor to destroy the pneumococcus, check its development, to increase the powers of resistance to it, or to neutralize its effects. There is neither medicine, serum or vaccine which can be relied upon to destroy the germ or check the course of the disease. A servicable vaccine may be obtained from the patient's own pneumococcus, but as this takes fourteen days to prepare, the patient will be either dead or well before it is ready. Yet with the example of diphtheria before us it is not much to hope that before long we will have a reliable anti-toxic method, applicable to pneumonia.

Symptomatic.—The fact that, in the healthy young, the tendency is to recovery, has led to what is called the expectant treatment, and this implies that but little, if any treatment is required unless some particularly urgent symptom arises. The patient should be kept in bed, in a room at a temperature not above 60° F. with the windows open, the patient being out of draughts. The open-air treatment, while practicable in hospitals, is out of the question in private practice. The covering should be light. The diet should consist of milk, beef-tea and eggs. Two or three pints of milk and two eggs in twenty-four hours being sufficient for an adult, much harm being done by giving more milk than can be readily digested. For the thirst the milk may be diluted with some

effervescent water, or water, acidulated with lemon juice may be given. A purge of castor-oil, or of calomel and colocynth should be given at the commencement, and a diaphoretic mixture or a hot bath will relieve the hot, dry skin. Expectorants are unnecessary and the pain in the side may be relieved with counter-irritation, hot poultices, or leeches. As the heart has been heavily taxed, the patient should not be allowed to leave the bed until ten days after the subsidence of the fever. The complications connected with the pleura, such as empyema are so common that daily examination of the pleura should be a routine measure.

Treatment of Special Symptoms:—In pneumonia there is a relation between the pulse, respiration and temperature; thus with a temperature of 103° F. we should find a pulse of 120 and a respiration of 40. In such cases the fever requires no treatment, but where there is a sudden hyperpyrexia or there is a continued high point maintained during twenty-four hours, treatment is called for. While the former condition is not, strictly speaking, common, yet it is very dangerous and requires immediate attention.

Here we may use sponging, cradling and packing, and in extreme cases, even ice cold baths. In small children, baths at a temperature of 105° F. to 108° F., a little mustard being added to the water gives a powerful, and often very happy reaction. Antipyretic drugs and the old-fashioned depressant treatment by repeated bleeding, veratrum, aconite, etc., are dangerous and inadmissible. The weakness of the heart may be met with digitalis, watching for cumulative action, strophanthus, caffeine and nux vomica, the latter being most serviceable for prolonged use. Alcohol or subcutaneous injections of strychnia are of value for sudden emergency, such as collapse.

Where the lungs are greatly engorged, the patient cyanosed, and the right heart over-distended, great relief may be given by free and rapid venesection, a pint to a pint and a half of blood being withdrawn. This is especially valuable in a young, full-blooded, healthy adult, with a florid complexion and well developed muscles. It is contra-indicated in the extremely aged, the very young, and in anemics. Dermoclysis has been advocated as another way of diluting the toxins but is not based upon sound theory and is not to be recommended. Stimulants may be required in the aged or weakling and in the alcoholic, or may be our sheet anchor for a short time where there is a very intense fever, but is not required in the ordinary case. Oxygen, to be of use must be employed early for cyanosis, and not deferred until the patient is moribund. For the pain or "stitch in the side," hot poultices are of value. Morphia is uncertain, and for general reasons, undesirable. The best remedy is leeches over the seat of the pain. While cold applications have been highly recommended, they have not been successful in the practice of the author. Cutaneous hyperaesthesia, when local may be relieved by the application of tincture of aconite, when general, by tepid sponging. The cough is rarely severe enough to call for treatment.

Hiccough is usually associated with diaphragmatic pleurisy, is a very grave symptom, and rarely yields to treatment, even by injections of morphia. Delirium may be due to high temperature, or some serious complication and must be dealt with accordingly. Stimulants are usually required. Such sedatives as bromide of ammonia, with or without chloral, or hyoscyamine and cannabis indica are useful. Hyoscyamine may however be risky and veronal has serious objections.

The sleeplessness is usually due to high temperature or pain and here we must treat the cause by hot baths, cold douches or even morphia. Narcotics of any kind must be used with the greatest of care, if at all, the great objection being that they diminish sensibility of the respiratory tract, and thus check cough and expectoration. The guide is the amount of secretion in the air-tubes. They should *not* be used where there are signs of congestion in the non-consolidated parts of the lung, for such cases are practically always fatal and morphia simply hastens the end. If morphia is used it should not be given by the mouth. The digestive tract rarely gives any special symptoms, but if food is refused, nasal feeding should be resorted to. Vomiting or diarrhoea are usually due to the diet and may be controlled by a change of food.

"After all if we cannot treat the disease, we can treat the patient, and if we can relieve his symptoms, or the disease, or discomfort they cause, we must so far do good, and we have daily proof that we do. There is no disease in which careful watching and skillful treatment show better results than in pneumonia."

In the discussion of the paper which followed Dr. Lees pointed out that it is usually the right heart which fails, not the left; the urgent dyspnoea and sleeplessness which accompany this condition may be quickly relieved by leeches, and in neglected cases by venesection. The gravest danger is due to the rapid multiplication of pneumococci and in his practice he has found that the application of an icebag to a pneumonic area causes a diminution in the area of dulness and a freer air entry. The mouth, throat and nose should be frequently rinsed and thus arrest further supply of infective material. The administration of hypnotics should not be delayed, the safest and best being chloralamide. Dr. Blenkinsop spoke highly of counter-irritation by croton oil. Dr. Kidd believes that the condition of the nervous system is almost as important as that of the heart, and highly recommends the use of opium. Dr. Phillips' opinion was that hyperpyrexia is the chief danger and uses dry cupping, leeches, venesection and quinine. Dr. Latham deplored the frequent examination of the chest in pneumonia patients and urged as complete rest and freedom from annoyance of examinations as possible. He uses morphia as an hypnotic and has had good results from the administration of dead pneumococci by the mouth. Drs. Ewart, Squire and Willcox, also discussed the paper.

Almost without exception, those who discussed the paper commended leeches and venesection, urged the use of stimulants, preferably alcohol at a much earlier stage than was advised by West, and that opium in some one of its various forms is not only wise, but decidedly beneficial.

TUBERCULOSIS

Edited by Arthur T. Laird, M. D.

Studies Regarding the Morphology of Tuberculous Sputum. (Beitrag zur Morphologie des tuberkulösen Sputums.)

ZICKGRAF. *Zeitschrift für Tuberkulose*, 1908, xii, 120.

Since the discovery of the tubercle bacillus, the examination of the sputum has been almost limited to its detection. The study of elastic fibres formerly thought so important has been quite generally abandoned. Yet they are frequently found in the sputum very early in the course of the disease, sometimes before tubercle bacilli can be demonstrated. The author thinks that one reason that they are not more often sought, is that the methods proposed for their detection are too complicated for clinical use. He offers the following simple method:

A small portion of the sputum is placed on a slide and is covered with two drops of diluted caustic potash solution. The preparation is gently heated but it is not necessary that the soluble portions should be completely dissolved. Especial care should be taken not to let cotton threads get on to the slide, and only double contoured fibres having the characteristic alveolar arrangement should be considered as elastic fibres. The specimen should be collected early in the morning in a thoroughly cleaned receptacle. The mouth should be first rinsed out.

The author compared the results obtained by his method with those by May's Orcein method and found it practically as satisfactory. He examined the sputum of seventy cases and found the elastic fibres in eighty-nine per cent. of them. He used only muco-purulent sputum and does not expect to find elastic fibres in the strictly mucoid sputum.

With the disappearance of the purulent character of the sputum the likelihood of finding tubercle bacilli also diminishes. He found tubercle bacilli in only sixty-one per cent. of the seventy cases, and found elastic fibres in cases where he was unable to demonstrate tubercle bacilli. In the early cases he found them three times as often as he found the bacilli. The presence of elastic fibres in the sputum is almost a sure sign of tuberculosis of the lungs as practically the only other conditions in which they are, are lung abscess and ulcerative bronchitis. He believes that the presence of elastic fibres is of no more unfavorable prognostic significance than the presence of tubercle bacilli.

The second portion of the paper is concerned with the investigation of the leucocytes in the sputum. Purulent specimens were selected for study. Differential counting and the study of the various types of polynuclear cells according to Armeth's classification was not found practicable. The sputum is not sufficiently homogeneous. The age of the leucocytes varies much and in every specimen are found many cells partially or completely destroyed. About one hundred specimens were studied.

Eosinophiles were found in many but not in quite all of the cases, the number varied in the different cases and at different times in the same case. With Otto and Hildebrand the author believes that these cells have no special diagnostic or prognostic meaning. The great numbers

present in some cases he thinks may either arise from the cells of the mucous membrane of the respiratory tract or from other leucocytes, which have become transformed into eosinophiles.

The small mononuclear cells were found only in very small numbers in the specimens examined, often only a single one in many fields.

The principal cells found were the polynuclear leucocytes mostly with very irregular nuclei. The cells appear to be most readily destroyed. With the tri-acid stain preparations are obtained in which entire fields may be covered with scattered granules and fragments of nuclei.

Only a few transitional cells were found. The author's conclusions are that it is worth while, as a routine, to examine sputum for elastic fibres, but that it is doubtful whether any valuable conclusions can be drawn from the study of the leucocytes in the sputum.

Variations of Temperature in Pulmonary Tuberculosis and their Clinical Significance. (Les Réactions Thermiques chez Les Tuberculeux Pulmonaires et leur Interpretation Clinique.)

C. L. MANTOUX, *Revue de la Tuberculose*, 1907, *Second Series*, iv, 395.

The temperature in pulmonary tuberculosis is an important matter; fever constitutes one of the cardinal symptoms. In a number of cases it settles a doubtful diagnosis. Its oscillations often very closely parallel the activity of the morbid process. The indications given by the thermometer are of a special importance when it is necessary to decide what kind of life the invalid must lead and what treatment he must undergo.

I. Technique of Thermometry.

A. Where shall the temperature be taken?

1. *Rectal or vaginal temperature.* This is the only exact method. It may be readily employed when the patient is in bed and should then be preferred. On the other hand when the patient sits up and is dressed and passes a good part of the day on the reclining chair, it is manifestly impracticable to make him go in the house and undress for the purpose of taking his temperature. It would often be unadvisable also on account of the exertion involved especially if there were stairs to be climbed.

2. *Axillary temperature.* This is a poor method. The difference between the axillary and the internal temperature may be considerable. In certain cases the perspiration moistens the thermometer which then no longer gives an accurate reading. The fact that the patient must partially undress is a disadvantage.

3. *Temperature by the mouth.* This method must generally be used. The patient should be given complete directions. The bulb of the thermometer should be placed under the tongue, and while the temperature is being taken the patient should neither talk or breathe through the mouth. In patients with nasal obstruction the temperature can not be satisfactorily taken by the mouth. The thermometer should remain in

place until the maximum is obtained, the exact time can be determined by the patient himself without removing the thermometer by the aid of a small hand mirror but this refinement of procedure is not necessary. Practically every thermometer even those certified as registering in one minute should be left in the mouth a quarter of an hour, especially in cold weather. During this time the patient should not take it out of the mouth. The lips should be tightly closed and he should breathe through the nose. Among the sources of error, the effect of hot drinks previously taken, warming up the entire buccal mucous membrane and the complete chilling of the tissues when the weather is very cold, below 15 to 20 above zero, should be remembered.

4. *Temperature of the Urine stream.* This method is more exact than the buccal method. The sources of error are the fact that if the urine is scanty there is not long enough continued contact with the thermometer. A sensitive thermometer should be employed. The urinary temperature may differ somewhat from the exact internal temperature at the moment since it takes a certain time for the mass of urine when separated from the circulation to be warmed or cooled again. Of course the method is not practicable in the case of women patients.

B. When should the temperature be taken?

As a rule three times a day: on rising, retiring and at the time of maximum temperature (usually two to six hours after noon). This time varies in different individuals and it is important to determine when it occurs by taking the temperature every two hours for a few days. This is better than depending on the subjective sensations of the patient. The morning temperature should be taken at the moment of awakening; it is often higher than several minutes after. It may be necessary to take the temperature more frequently *e. g.* when it is desired to determine the reaction after exercise or less frequently as in the case of nervous individuals.

II. Interpretation of thermometer readings.

A. Normal temperature.

The normal internal temperature is generally considered to vary between a minimum of 97.7° and a maximum of 99.6°. In reality each subject has his own normal temperature and this varies in different individuals. Certain patients have the subjective symptoms of fever when their temperature rises but three or four tenths of a degree. In some cases the thermometer may give a reading of 104° without there being the least malaise. On the other hand there are patients who every day at a certain hour have all the subjective symptoms of fever, malaise, prostration, shivering, sensation of heat and marked acceleration of the pulse without any thermometric rise.

B. Elevated temperature.

It is often necessary to determine whether a rise of temperature is due to an extension of tuberculosis or to other causes.

1. *Temperature due to other causes than tuberculosis.*

The tuberculous patient is extremely sensitive to all causes tending to elevate the temperature. There is a veritable neurosis of the heat regulating mechanism. This instability of temperature in people habitually

apyretic is in itself an excellent symptom of tuberculosis. It is also a good measure of the individual's degree of resistance and of his progress toward recovery.

A.) *Fever of overexertion.* This is supposed to result from an auto-intoxication caused by fatigue. It is especially likely to occur after a journey. Some people must be thoroughly tired out before an elevation of temperature occurs. In others the slightest exertion suffices, such as dressing, writing a letter, etc. With them every act is overexertion. This rise immediately follows the cause and its degree varies with the cause. It may last a very short time. If one of these patients is told to take a short walk, his temperature may go to 100° but an half hour later may return to its usual level. This febrile reaction immediate and transitory, following moderate exercise is especially characteristic of tuberculosis and may aid in making the diagnosis. The "walking test" is useful in the regulation of exercise. The patient should take his temperature immediately after, and one half hour after returning from a walk. There may be a rise of temperature in normal people, even to more than 102 after prolonged severe exertion such as forced marching or mountain climbing.

B.) *Emotional fever.* In certain patients the fear of having an elevation of temperature suffices to produce it. Every sort of lively emotion, whatever its nature, sad or gay, agreeable or vexatious, may bring about this result. Moral calm is just as necessary for the patient as physical rest. It is important to know this when interpreting the results of subcutaneous tuberculin injections. Twenty-one patients out of a hundred warned in advance what symptoms to expect showed a rise in temperature, in some cases, two to three degrees. Visiting day in a hospital often causes high thermometer readings.

C.) *Menstrual fever.* This may occur in patients apyretic at other times. It usually begins several days before the flow. Its rise may be abrupt or gradual. Defervescence usually coincides with the appearance of the flow. It may occur only at certain hours or it may last several weeks or almost to the next period. Such cases are likely to be serious. In certain cases this menstrual fever may occur after the menopause. The menstrual fever may sometimes be the only symptom of tuberculosis in a patient apparently well and may direct attention to the lungs and suggest physical examination. There may also be a recrudescence of physical signs at the menstrual period. Rarely there may be inter-menstrual fever, half way between the periods.

D.) *Fever caused by therapeutic measures.*

1.) Certain drugs as hypnotics and sedatives may occasionally produce fever in apyretic subjects. The temperature will be found to be more elevated than usual the morning after the drug is given. This rise may follow the use of opium, codeine, chloral, sulfonal, trional. One drug may produce it in one subject and not in another. It may occur after each use of the drug or a tolerance may be acquired. It is important to know of the possibility of its occurrence in order not to diagnose wrongly the occurrence of some sudden complication. If due to the drug the fever rapidly subsides.

2.) External applications, counter irritation, and cauterization may cause fever.

3.) Hypodermic injections of every sort may be followed by fever. This may be the case even with children and may occur after a simple saline injection. Beside these unexpected elevations of temperature the characteristic fever following the injection of tuberculin should be mentioned. A constant rise of temperature is also said to follow the injection of diphtheria antitoxin in tuberculous infants.

E.) *Fever of gastro-intestinal origin.* Disturbance of digestion causes a rise of temperature quite readily even in normal individuals and tuberculous patients are especially sensitive to such influences. Simple constipation may cause fever and this sometimes persists after a single purgative.

F.) *Fever due to intercurrent diseases.* La grippe and typhoid fever are sometimes difficult to distinguish from exacerbations of the tuberculous process. In la grippe the great nervousness, the prostration, the muscular pain, the sensitiveness of the eyeball to pressure, the presence of an epidemic and the effect of quinine aid in the diagnosis. The differentiation of typhoid fever from tuberculosis will be discussed under the next heading.

2. *Fever due to tuberculosis.*

Elevation of temperature is the first and principal symptom of incipient or latent tuberculosis.

A.) *Acute tuberculous fever of the typhoid fever type.* ("typho-bacillose" of M. Landouzy) may be distinguished from typhoid fever by the following signs:

1. The fever reaches its maximum very quickly, on the second or third day. It may reach 104°.

2. The temperature is very irregular and is sometimes of the inverted type.

3. The pulse is very rapid.

4. Sweating is common.

5. Catarrhs, intestinal, pharyngeal and laryngeal are absent or slight.

6. It has a rapid course.

7. There are no rose spots, the serum reaction is negative and no typhoid bacilli are found in the blood or stools. It may terminate in death, apparent cure or localization, generally pulmonary or meningeal. There may be milder forms. There may occur in apparently healthy persons an acute rise of temperature not lasting more than a day or two the graphic representation of which would be like a steeple. This "steeple" fever may occur in incipient tuberculosis or in healed tuberculosis. It may come at the time of menstruation or with fatigue.

B.) *Elevation of temperature in the course of pulmonary tuberculosis.*

In general, the higher the fever the more advanced the disease but there is no constant parallelism. A patient with enormous cavities may be completely apyretic. There may be high fever though scarcely any lesions can be detected in the lungs. The activity of the morbid process is of much more importance than its extent.

According to Strumpell the five types of tuberculous temperature are: (1) Subfebrile. (2) Remittent (with morning remission). (3) Continuous fever of the typhoid fever type. (4) Hectic intermittent fever seen in cavity cases. A benign intermittent type has also been described. (5) Irregular fever. Two types may alternate.

To get a correct idea of the temperature variations it should be taken every two hours. There may be both diurnal and nocturnal elevations.

Dry pleurisy, pneumothorax, and catarrhal bronchitis may occur without affecting the temperature. Pleurisy with effusion while usually accompanied by fever is not invariably. Even congestive processes may be entirely apyretic. Pneumonia whether an intercurrent infection or a rapid extension of the tuberculous process is always accompanied by fever. In the latter case it never has the classic curve of frank croupous pneumonia. Hemoptyses may be apyretic or may be accompanied by slight nervous fever. A persistent fever following soon after a hemoptysis indicates a complication such as a congestive process or bronchopneumonia.

III. Subnormal temperature.

This is a matter of less importance. It is of three varieties:

1. Due to migraine.
2. Following the elevation in hectic fever.
3. As a symptom of collapse.

OPHTHALMOLOGY

Edited by Charles M. Culver, M. D.

A Peculiar Infection of the Free Border of the Eyelid (Meibomian streptothricosis.) (Infection particulière du bord libre palpébral (streptothricose meibomienne.)

D. CASTELAIN. *Annales d'oculistique*, October, 1907.

The author describes a strange affection of the free margin of the lower eyelid. He and Dujardin, in consultation, diagnosticated the morbidity as actinomycosis, the symptoms of this affection seeming, clinically, to be evident. The patient was a spinner, fifty-seven years old. The ailment, which was of long standing, was characterized by small, nodular growths from which minute, yellowish masses could be squeezed. Bacteriological examination of these tiny, yellowish masses, proved that the case was not one of actinomycosis but of a streptothrix, whose presence, at the surface of the lid, had not previously been demonstrated. There was an abundance of Gram-positive, slightly curved rods, or Y-shaped filaments, which formed a grumous scum when grown on the surface of bouillon deprived of air. Cultures were likewise made on glycerin-potato and also on glycerin-serum. The microbe scarcely grew on carrot, non-glycerized potato, infusion of hay, ordinary bouillon, gelatin or agar. Its vitality was feeble, so that inoculations of cultures into the anterior chamber, the peritoneal cavity, or under the skin of rabbits, gave negative results. The organism was believed to be the variety of streptothrix represented by Axenfeld in his article of Ocular Bacteriology in Koller and Wassemann's *Treatise* (page 560, case 3). The patient was referred to Morax, whose examination revealed the pneumobacillus as well as the organism already described.

ALBANY MEDICAL ANNALS

Original Communications

ANIMISM IN ANTIQUITY AND THE PRESENT STATE OF THE QUESTION.

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The problem of life is one that pure speculation is impossible to solve, if it is not based upon scientific facts. Biology, in the broadest sense of the word, furnishes the material which is absolutely necessary in every philosophic hypothesis relating to the intimate nature of life. Now, in this science of the living being we will not only include anatomy and physiology, but the natural history of animals and plants, the study of morbid conditions of the organism, medicine in its ensemble and all the modern sciences which are termed biologic chemistry and physics.

The ancients did not hesitate to give themselves up to the study of anatomy, physiology and medicine, and Hippocrates, Aristotle and the physicians of Alexandria have carried with them in their studies their spirit of observation and scientific curiosity.

The natural history of both Aristotle and Pliny contain very ingenious views and precious observations although scattered among errors, which are recognized at the present day. Physics, which was still in a rudimentary state, was occasionally united to mathematical researches and the name of Archimedes is a proof.

Chemistry on the other hand was an unknown science and antiquity never went beyond the instinctive conception of the four elements; these forces which, under the name of chemical affinities, play such an important part in biologic phenomena were not even suspected. To sum up it may be said that science was merely a dependence of philosophy and that it simply had a secondary influence upon metaphysical conceptions. In point

of fact the Greek mind was above all avid for the understanding of things at the risk of causing discord with those facts that it had not the patience to methodically observe, and it was led on by its dialectic and often also by its admirably poetic imagination. The ideal of the Greek mind was in harmony, in order and in the just and well balanced reason; this *εὐρυθμία*, that we so much admire in the art and literature of this people, makes the foundation of all their works. They constructed philosophic systems just as they built their temples; they saw things and they understood nature as the image of their minds and they believed that reason and harmony existed and governed everywhere. Observers, however, are encountered among them. Hippocrates represents the reaction against the spirit of pure speculation, and in spite of this the individual character of Greek genius is to be often found in his writings if they are carefully read.

Auguste Comte, taking up an idea that had already been put forward by Turgot, affirms that every society passes successively through three conditions of the mind, namely, the theologic, the metaphysic and the scientific states. If this law is correct, the Greek mind is a perfect example of the metaphysical state. Now in the question which we are considering, the consequence of such an intellectual disposition is not doubtful. The weakness of the knowledge of physics and chemistry, the incomplete development of anatomy and physiology, the entire absence of any notion relative to living matter and its irreducible properties and on the other hand a decided leaning towards *a priori* construction and the creation of metaphysical entities, an admirable faculty of dialectic, all contributed to remove from Greek philosophy the conception of considering life as the result of complex forces, everything carried it towards a more simple and harmonious theory, uniting the thought and vital facts under the direction of one and the same principle and substance, the soul. All this goes to prove the truth that philosophical systems are the sympathetic expressions of the tendencies of the time, of the race and of the individual.

Latin philosophy marks itself more particularly by its absence of originality and it merely takes up the Greek theories and for this reason it became influenced by the same ideas.

If by animism one understands all doctrines which identify the cause of vital phenomena with the principle of the thought

and which separates this principle of the body by making it a distinct substance under the name of the soul, no matter what the nature of this may be, it may be said without hesitation that entire antiquity was animistic with the exception, perhaps, of a few medical schools.

Is it not possible, however, to make some distinctions in this animism of the Greek and Latin philosophers and physicians, and can it be upheld that the animism of Plato and Epicurus are absolutely similar? We do not think so and we believe that it is possible to find in embryo, a certain tendency towards each of the three great theories on the nature of life actually maintained. The animism of Plato is united to a spiritualistic doctrine; the soul is distinct from the body inasmuch as substance is the immaterial and spiritual nature and still more it is immortal. Epicurus, the Atomists, the Stoicians, and perhaps even Galen, always admitted the soul as a unique principle of life and thought, but they attributed to it a material essence, only more subtle than that of the body.

As may be seen, all these philosophers realized under the name of soul the unknown cause that they admitted as existing behind the phenomena of life. They were metaphysicians above all and none of them doubted the actual existence of this principle of life. Now admitting this fact, is it not true that among the Platonicians, animism was purer and more in unison than it exists among the spiritualists of modern times. Plato already had sown the seeds of Stahl's conception. On the contrary among the materialists the mechanical doctrine began to show itself, although not as yet developed. These philosophers endeavor to explain the soul by a combination of atoms.

One may be a spiritualist and mechanist at the same time as was Descartes for example, and one may at the same time uphold materialism and a kind of inconsequent animism, but it is nevertheless true that one thus exposes himself to numerous contradictions and the propagators of such systems are not long in making them one by abandoning one of the points in order to better consolidate the other, and it is probable that Descartes has made more than one materialist.

Vitalism itself, which in appearance seems so opposed to the spirit of the Greek and Roman monodynamistic philosophy, vitalism that has been believed to date from Barthez or Cudworth, appears in the form of a tendency in Aristotle and all

those who admit a vegetative soul more especially governing the direction of life. In the hypothesis of the three souls, in the theory of *pneuma*, in all those conceptions where one finds expressed the idea of an intermediary between the soul and the body, between the thinking and reasoning principle and the organism, there exists according to our way of thinking a germ of vitalism. Centuries were necessary to cause these theories to develop from their rudimentary states, to bring them to light and finally to oppose them among themselves, until the time when they could be conciliated in the midst of a more comprehensive and vast system, if however, this is not too much to hope for.

Animism has developed since antiquity and has accommodated itself, as much as it could with the progress of biologic sciences and psychology. The most celebrated representative of this doctrine was a German physician of the seventeenth century, Stahl, both a philosopher and physiologist. He attacked the ideas of Boerhaave and Hoffmann and he posed as a resolute adversary of the mechanism of Descartes. He upheld the hypothesis of the principle of life, identical to the thinking soul.

Stahl believed that there were two lives in the thinking soul, that of reflected thought and of a will in full possession of itself, and then with this, an organic life, a spontaneous yet unconscious life leaving no trace in the memory because it was a stranger to reflection and reasoning. It was on account of this latent activity that at the beginning, the soul took possession of the germ, became organized and constructed its home itself and after the formation of the organs it was the soul which maintained them and ministered over them, and when the body became fatigued or diseased it was still the soul which undertook the work of repairing and curing it.

Such is briefly Stahl's theory and, as will be seen, is animism in its highest development, with all its consequences. In other words it is the identification of the soul and the principle of life. This system has often been dated back to the origin of animism, but we have in other writings endeavored to show that this is not the case.* In point of fact animism under its most varied forms was certainly the theory which predominated in antiquity and as has been painted out by Saisset it was not Stahl who

*C. G. Cumston. "The Theories of Life before the Hippocratic Era." *Medical Library and Historical Journal*, 1903.

originated animism, he simply took it up again without knowing the peripatetic condition which was never entirely lost, thanks to the School of Alexandria, and later to the Arabian philosophy and Christian scholastics. Nevertheless, Stahl added certain things to the animism of the Greek philosophers, especially Aristotle. According to them life depended upon a lower faculty of the soul, to a nutritive or vegetative soul, while the German physiologist considered that it was the soul itself, endowed with reason and will, which presided over the acts of organic life. He established a distinction between the *λόγος* and the *λογισμός*. The latter is simply the conscious and reflected reasoning, while the former is unconscious simple reason. Now, it was by the *λόγος* that the soul acted upon the vital phenomena.

Since Stahl's time the animist theory of life has found many partisans among physicians, biologists and especially among philosophers. We should also mention a predecessor of Stahl, little known in medical and physiologic science, but who was nevertheless a defender of the animist theory. We refer to Per-rault, the author of "*La Colonnade du Louvre*."

Latterly animism has been upheld by a certain number of philosophers among whom may be mentioned Albert Lemoine in his work on "*L'Ame et le Corps*," Francisque Bouillier in a book entitled "*Le Principe Vital et de l'Ame Pensante*," Tissot in his "*Vie dans l'Homme*" and Charles in "*De Vitae Natura*." Their animism is in reality quite similar to that professed since antiquity by Aristotle, the School of Alexandria, Stahl and others. The philosophers are ardent defenders of spiritualism against the progress of organistic materialism.

According to Bouillier, the soul possesses two kinds of function, the vital and the intellectual. Of the former it is conscious while the latter belongs to the domain of unconsciousness. This theory to-day in favor of unconscious psychologic facts is based upon quite a number of observations and the more modern animists are using it in building up their system. They say that since psychologic facts exist outside of consciousness, why should the vital functions not take part in these unconscious faculties of the soul? Like these deaf thoughts and blind perceptions of which Liebnitz speaks, facts of vital order may remain outside the domain of consciousness according to the animist, without ceasing to be functions of the soul. And still more, these philosophers say that man is not possessed of a

kind of general sentiment of organic life, such as has been called *caenesthesia* by Reil.

Another element of demonstration has been added to these arguments by Bouillier who believes that by its definition, the soul is an essential motor activity and from this it results that the corporeal functions may be explained by the action of this soul thus defined. The objection, however, might be raised that the point to establish is precisely that which our writer takes as a starting point in his definition. And lastly, basing himself on his theory, Bouillier invokes the relationship between physics and moral.

We have briefly examined the arguments in favor of animism and it remains for us to show the principal objections to which this doctrine is open. The first objection that has been brought up has been taken from psychologic consciousness and may be summed up as follows: the functions attributed to the substance soul are characterized by the fact that they are immediately taken possession of by the self and related to this self as subject; the soul is an activity having consciousness of this self *vis sui conscia*. Now, the phenomena constituting life differ from psychic phenomena, inasmuch as they do not become included in conscience thus defined. One must admit that we are not conscious of the circulation or digestion, and still less capable of producing and directing these operations. But as we have seen animism replies, after more decided and numerous observations noted from day to day, that the psychologic facts are not all facts of consciousness.

All this is quite true, but it is none the less certain that a distinction exists. In point of fact if one can say that certain psychic phenomena, such for instance as the operations of the memory in certain cases where a souvenir that one endeavors to recall to mind does not come until after a more or less lengthy lapse of time during which thought is occupied elsewhere, if one can say that such phenomena arise outside of a clear and perfect consciousness, it does not follow that they are absolutely unconscious. It would seem rather as if these psychologic operations arrive gradually to the conscience and that they pass from obscure consciousness to full consciousness.

If they do not finally become seized by the conscious self, what other manner of consciousness would we have? It is

necessary in order that we should know positively that such phenomena take place in our self, that this self has a consciousness of it at a certain time. Now as regards facts of a vital order, this is not the case. If the sensible knowledge, or the external perception does not intervene, man would not know what was taking place in his organism, he would not know that his blood was circulating and that his tissues continually assimilated and constantly. Such facts are objects of science and not of consciousness and it is merely as phenomena external to our thinking self that we know them.

It is quite true that the argument of the animists taken from this kind of vital sense, from this general sentiment of organic life that we all possess, is a well founded argument, but does it carry the consequences which the partisans of the identity of vital principle and of a thinking soul draw from it? We do not think so and in point of fact, if we have consciousness of our organic condition in general, of good or poor functioning of our body, it is by the intermediary of our tactile, muscular or other sensations. This consciousness is, so to speak a resulting, but very complex, sensation, although quite simple in appearance. That which we have consciousness of is not our organic state, but is merely the ensemble of sensations produced by this state, a condition which is quite different, because the vital sense is no longer the result of psychologic consciousness, but in reality a sensible consciousness. In the same way that we have not consciousness of a phenomenon of the external world, but in reality sensations which represent it to us, in the same way we have not consciousness of our organic life but are possessed of sensations which are the signs of it revealed to our thought.

There is however, a fact which should be retained from among all this, namely, that the corporeal self exists, that the organic individual is closely united to the thinking individual in the notion of a total self distinct from all other beings. It is this point that we will again take up when we shall endeavor to establish the unity of the living being against mechanism and organicism.

A second objection is made to animism understood in the sense of dualistic spiritualism, of this traditional spiritualism which regards the body as a material composition differing by its essence of spiritual and simple substance, as is the soul.

In point of fact biologic sciences show the diffusion of the vital properties throughout the organism. The cell elements possess certain faculties, such as motility, contractility, irritability, etc., which are in themselves undeniable manifestations of life.

For this reason one is obliged to admit, since the soul is undivided and simple, that each part of the body, each cell, and even more each particle of protoplasm possesses a distinct soul as far as substance is concerned. It must, however, be admitted that the result of this would be an incalculable number of souls and that the spiritualistic doctrine of the unity and simplicity of the soul would be most seriously compromised. But the animists, at least a certain number, have formulated a reply to this objection. They say that the soul is not what certain spiritualists understand it to be; it is not a solitary cause, retired in its essence, but is on the contrary a living unity which extends throughout the entire human and animal organism, a unity which is defined and is understood by its vital activity. This theory comes near to Aristotle's conception that the soul infiltrates the living organized body.

It must be admitted that animism understood in this manner is a praiseworthy effort to do away with the duality of the body and the soul and this is the thought that Bossuet expressed when he said, "The soul and the body form a natural entity."

This effort, however, does not completely fulfill its end, because under this form animism intimately unites the functions both of the soul and the body. It none the less admits substantial duality, matter and spirit, unless it does not reduce this soul to a simple result of the activity of matter, which would itself be destroyed precisely in favor of the adverse theory. Consequently any effort, although praiseworthy which animism may make to unite the body and the soul in a simple and synergic action, life, is not sufficient to explain the divisibility of living matter in accordance with the unity of the spiritual substance and there always exists this unexplainable duality.

To say that the soul is merely a spiritual power which makes the unity of the body is either to admit that this unity is only the result of the dynamic properties of matter, in which case

one is dealing with pure materialism, or else one considers as possible that a spiritual faculty, possessing a distinct essence, acts on thousands of material particles of an organism in order to produce a simple and unique action. In the latter case the problem of the relationship of the two substances comes again into play and is also quite as insoluble. In point of fact it is one, and the same thing to act on matter or on the functions of matter to make them one or to give them such and such a character.

Comparative anatomy and physiology appear to raise a third objection against animism, especially when understood in the same manner as did the ancients. If the unity of the soul and the complexity of life appear in contradiction to one another, what would spiritualistic orthodoxy say when it was necessary, in order to accord animism with facts and to conduct this theory to the end of its consequences, to attribute a soul to the most infinite protozoair, to the most humble mushroom or even to mould? What would become of the immortality of the soul, so dear to traditional dualism? The consequences of animism become serious, but we will admit that the fact of attacking the ancient spiritualistic orthodoxy does not in itself constitute a real objection. This is not what we wish to imply and we are absolutely in favor of the general expansion of the spiritual principle, if by it one may explain things better than by any other hypothesis. But what we pretend to demonstrate is the inability to reconcile animism with the absolute and exclusive dualism, as was taught by Plato and many other spiritualists. One may perhaps reply to our contention as follows; the soul conferring vital unity does not exist in the lower animal scale which only shows the elementary properties of living matter and it only exists in the higher orders of animals. In this case one would do well to state exactly which animal marks the limit of these two classes of living beings and we would be curious to know at just what point of the animal scale appears this unity which confers the soul. And on the other hand, living matter, and consequently life, exists in inferior beings. Now, if these have not a soul, how is it that they have life since it has been stated that the one is not explained by the other?

And finally a last objection which sums up all the others is the metaphysical one relative to the relationship of the two

substances, the soul and body, spirit and matter. How can it happen that a simple immaterial substance can act on a complex substance which is both material and understood? This is the ardent problem of metaphysics for which so many solutions have been proposed in vain. It would be impossible for us to expose the theories of Descartes, Euler, Leibnitz or Malebranche and we cannot discuss the hypotheses of occasional pauses, of the intermediary principle or pre-established harmony, but we can affirm that none of these theories have been able to withstand criticism.

Animism pretends to base itself upon the relationship of the physical and the moral but it does not explain them, at least if it remains united to dualistic spiritualism. On the contrary, it falls before the objections that are raised against this relationship of the two substances. There is a great distance separating the affirmation of the reciprocal influence of the physical and the moral from the affirmation of the action of one substance upon another. In the first instance one finds an undeniable fact of observation, while in the second one draws an untenable metaphysical conclusion. The fact is there and it must be explained, but in another way. Consequently animism cannot be admitted in the dualistic hypothesis. Thus the objections that we have examined may all be reduced in a final analysis to the impossibility of understanding the action of the soul defined according to dualistic spiritualism on the body, also defined according to the same system.

It has been seen that antiquity contained numerous germs of mechanism and of vitalism and in the doctrines of the Atomists and Epicureans there is to be found a distinct, but yet, incoherent, materialism. In modern times, especially at the present, the numerous and brilliant discoveries made in the exact sciences of physics, chemistry and biology, have developed the tendency to explain everything by the properties of matter. Descartes had already developed a mechanistic theory of the animal and since his time physiologists like Boerhaave, Bordenave, Cabanis and Bichat have greatly aided this thesis by their observations, experiments and reasoning.

There are two distinct tendencies in the mechanistic theory of life. One sees in the vital phenomena a simple particular case of the physical and chemical phenomena, while the sec-

and believes that living matter is distinct from gross matter in its properties and that life is merely the result of these properties of living matter. This last theory which is called organicism, because it affirms that life is inseparable from the living organs, has been professed by Haller, Bichat and the Paris school.

Quite recently the first of these theories found an excellent champion in the person of Le Dantec. This savant has shown that all the phenomena of elementary life could be reduced in the final analysis to chemical and physical phenomena. Now, life, such as it manifests itself in the superior order of animals, is the result of an ensemble of elementary lives. In his work entitled "*Nouvelle Theorie de la Vie*," he says: "Ce qu'il importe surtout de remarquer, c'est que l'activité de l'homme résulte, non seulement de toutes les activités élémentaires de ses plastides, mais encore de la coordination de ses activités élémentaires. Si l'activité d'un plastide peut être considérée comme le résultat direct des diverses réactions d'une petite masse de certaines substances chimiques en présence d'autres substances appropriées, l'activité de l'homme doit être considérée comme le résultat du fonctionnement d'une machine extrêmement compliquée, dans laquelle les réactions des substances chimiques en question interviennent comme moteurs."

As may be seen, this theory endeavors to explain the vital phenomena by the general laws of physics and chemistry. It also criticises the teleologic argument by saying that we observe the results of natural selection and that this is precisely the cause of the apparent finality of nature. Such are the principal points of Le Dantec's theory, and it may be said that it is the most perfect exposition of scientific mechanicism, but whether it is sufficient to explain life or not will be considered further on. Before proceeding we would mention the objection raised by vitalism against the mechanistic theory.

Vitalism, professed especially by Barthez and his disciples of the Montpellier school, admits a principle of life independent of the organs and confers upon them their unity in function. As to the nature of this principle, the vitalists do not distinctly indicate it, but it may be said that the modern representatives of this doctrine uphold that there is a double dy-

namism in man, the thinking soul, principle of the intellectual life, and the vital force, the principle of organic life.

The three dominating ideas of vitalism, those upon which it bases itself in order to reject organicism and to establish the vital principle are, the unity, spontaneity and the finality that we find in life. The latter character, finality, is the least certain of the three and we have pointed out how Le Dantec scores it. In his "*Histoire du Materialisme*," Lange thus explains finality that we believe to see in nature: "Si l'idée de finalité, nous est plus familière que celle du mécanisme, c'est justement parce qu'elle revêt le caractère exclusif des conceptions humaines."

On the other hand, the unity of the living being is a fact more difficult to deny and it is quite certain that the opinion which considers this being as a result of the properties of the plastides has the appearance of reason, but at the end one may always ask how it happens that this result is conceived by us as the unity, like a corporeal self. The same may be said of spontaneity. If the vital acts cannot all be reduced to reflex phenomena, it must be admitted that the living being possesses a part of spontaneity. The questions are as yet only incompletely decided among biologists and in opposition to Le Dantec, Chauffard brings up this triple objection of the finality, unity and spontaneity in the living being.

It appears to us, however, that in a strictly scientific sense, the mechanistic doctrine presents real advantages. In the first place it has simplified the phenomena and the laws and it has opposed the criticisms and observations of the most decisive nature against the ideas of the vitalists. In the metaphysical point of view, vitalism appears to complicate the question without solving it. The addition of the third element to the human being is purely arbitrary, or rather is merely an objective entity, destined to represent the conception that we make of a harmony, unity, a spontaneity of vital phenomena.

This vital principle is, so to speak, the personification of a property of observed facts, a personification which also pretends to explain this same property. The vitalists do not tell us whether the nature of this principle is of a material or spiritual essence and if it is an immaterial substance, how can its action on the body be explained? All these questions re-

veal the weakness of vitalism as a philosophic doctrine and its real value is to seize upon one of the appearances, one of the characters of vital phenomena, namely, their unity, and still this point is contested by the opposite group.

We believe that one should accord the superiority to mechanism as far as the scientific and phenomenal points of view are considered. Although it gives an understanding of what takes place and what is produced, mechanism does not offer the same superiority when it is necessary to explain that which is, that which acts, that which exists beyond the phenomena, in what Kant calls the domain of the "noumenes."

Mechanism is in reality a materialistic doctrine; it explains life by matter, its properties and laws. Now, in metaphysics such a doctrine does not seem to us able to withstand criticism; as long as it remains confined to the scientific domain, as long as it is applied to perceptible appearances, to the conditions of phenomena, it is all very well, but it should not extend beyond this limit. This has been admitted by Le Dantec in the end of his work which reads as follows: "Nous ne pouvons établir des lois que pour ce qui frappe nos sens, pour les phénomènes, aussi ne devons-nous parler que de ce que nous voyons; les sciences naturelles sont des sciences d'observation. Eh bien, dans ce qui frappe nos sens au cours de l'observation des êtres vivants, rien n'est en dehors des lois des corps bruts." Thus understood and restricted, the mechanistic doctrine is, according to our way of thinking, capable of great success, but it is quite permissible to search further and endeavor to discover the hidden reality from which they are all derived, as from a substance and a cause. Now if mechanism is the appearance of things what should be its basis? In order to solve this question we will examine what one must understand by matter and in order to do so we will base what is to follow upon an analysis of our perception of the said matter.

It appears from modern scientific works that the diversity of our sensations is due, not to diversity of external objects, but to the diversity of our organs of sense; the external phenomenon is always a movement. Our conception of matter is an objective realization of the abstraction of sensible properties that our external perception finds in external bodies. Now these properties are merely manners of movement di-

versified by our sense and our mind. This brings us to see what movement is in itself to which properties of color, heat, sound, etc., are reduced. Movement, as it appears to our sight is only a phenomenon; it is a series of visual sensations produced by a body occupying successive positions in space. This movement is brought to a series of visual sensations, which themselves are brought down to movements. There consequently is here a vicious circle, if one does not take care to characterize movement in another manner to which our sensations of color, sound, etc. are reduced. This movement is vibratory, that is to say a movement that we perceive, not as successive positions of the same body in space, but as modifications of the equilibrium of an elastic midst, that is to say like something similar to what we perceive by touch and the sense of resistance. Matter with all its properties of color, shape, solidity, may be defined by what one calls force. In his preface to the translation of the first book of Lucretius, "De Rerum Natura," Sully-Prudhomme says: "S'imaginer que la matière est essentiellement étendue, inerte, solide, c'est conserver les illusions de la connaissance spontanée. Quand nous sentons qu'un objet nous résiste, nous sentons que nous déployons contre lui une activité spéciale que nous appelons notre force musculaire ou physique; or le sentiment que nous avons de cette force déployée par nous nous révèle en même temps la nature de la chose qui nous résiste, par la raison bien évidente que deux choses qui n'auraient rien de commun ne se rencontreraient en rien, et que, en tant qu'elles se rencontrent, elles sont de même nature. Tout ce que nous savons donc de l'objet nommé matière, c'est qu'il est analogue, sinon indentique, à la force que nous lui opposons. Tout revient donc à examiner ce qu'est cette force, et nous ne pouvons interroger sur ce point que la conscience de notre propre activité physique."

As is shown in the quotation here given, the author points out that the different sciences unite in destroying the reality of matter to the profit of force. Mechanics defines the mass as a relationship drawn from the effects of activity, no matter what may be the intimate nature of the active being. The most recent progress in chemistry also tends to identify matter with this force, that one calls affinity, although in truth it is

little known. We have thus seen that matter as understood by the materialistic systems, is merely a mode of manifestation of a substance similar from its effects to the substance which determines in us the phenomena of will, effort and all kinds of activity. As Vacherot has said, "la matière inerte et informe n'est qu'une abstraction de l'esprit;" it may be the surface of things but it is not the groundwork. Dynamism is the basis; the last reality of nature and life does not escape this law. Hartmann, in his "Philosophie de l'Inconscient," says: "La matière consiste, suivant la dernière hypothèse physique, exclusivement en forces atomiques innombrables groupées ensemble de certains manières. Chaque atome de force est un effort. Qu'est-ce-a dire? Qu'est-ce que l'effort de la force atomique en dehors de la volonté, cet effort dont le contenu ou l'objet est formé par la représentation inconsciente du but de son effort? Les activités des forces atomiques sont simplement des actes de volition individuelle. Ainsi la matière a été résolue aisément en volonté, et en idée, et la différence radicale que l'on supposait exister entre la matière et l'esprit s'efface."

We are not prepared to go as far as this and we do not pretend to affirm, and still less to prove, that the unique substance is the will or any other spiritual essence. It is quite enough to have pointed out the possibility of an analogy between the psychologic phenomena and the physical facts, and to have shown that the division made between these two orders of manifestation is not as distinct as was thought for a long time.

As to the intimate nature of the substance, whose two orders of phenomena already mentioned are merely modifications diversified by the mode of knowledge that our mind applies to them, we have not the pretention to wish to identify it with the thinking soul. We believe, however, that the relationship between the spiritual and material phenomena is reasonable and that its metaphysical explanation is to be found in the unity of the fundamental substance. These two orders of phenomena are irreducible one to the other as far as manifestations are concerned, but they do not differ in their fundamental characters. This essentially differs from the materialistic doctrine, which pretends that physical phenomena produce the psychic phenomena, or more exactly, that the latter are produced by matter.

We know the present status of the objective reality of the notion of matter and we can clearly see what would be the consequences of this theory as applied to the problem of life. It is an open road leading to reconciliation of the opposed systems, namely animism and mechanism. The latter doctrine well expresses the appearance and the conditions of the phenomena, but it in no way indicates their cause. Instead of adopting the dualistic theory of the soul and body, animism, by employing the monosubstantialistic theory, does away with the objections that have been raised to it relative to the question of relationship existing between soul and body.

Life being a product of the ensemble of dynamic facts that one referred to matter under the name of physico-chemic phenomena, on account of its unity in the unique substance, in the universal being whose soul is a manifestation, of which it is itself an ensemble of manifestations, and the reason of its complexity and its diffusion, in the fact that living matter in its simplest form is a dynamic manifestation whose material substratum is in reality merely a manner of apparition; a dynamic manifestation which is nothing but the elementary life such as has been conceived by the upholders of the theory emitted by Le Dantec. It is not by the manner of activity of the mind that acts on the vital facts, but it is to the unique substance which is hidden behind the phenomena attributed to the soul that the phenomena, which constitute what one calls life, may be related.

We do not pretend that in this short paper we have offered a new and definitive solution of the problem and we have merely tried to indicate the actual condition of the question, compared to what it was in ancient philosophy. We have been desirous of distinctly separating the phenomenal domain which belongs to mechanism from the domain of causes and substances in which animism is powerless to solve the problem of the diffusion of life and the unity of the living being, if in the first place it does not reconcile itself with the dynamic theory on the ground of facts, and if it does not become absorbed in a doctrine permitting the comprehension of the relationship between matter and mind. We do not pretend to have established this reconciliation, but we merely wish to show its possibility in the way that we have traced.

ACUTE ANTERIOR POLIO-MYELITIS.

Read at the meeting of the Schenectady County Medical Society, May, 1908.

By CHARLES F. CLOWE, M. D.,

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This is a disease with which we are all more or less familiar, but I think in regard to which we can learn something, with a little analysis of the cases which have been collected. We all know, no doubt, that an epidemic of this disease occurred last summer in New York city and vicinity and that a great deal of work directed toward finding the cause and in other directions in regard to this disease is being done there. We must await with interest their report, but meantime it will do no harm to add our mite to the history of the affection. It may not be amiss to take up the subject in detail, then to discuss some of the opinions on the subject and then to examine our cases.

Polio-myelitis as a disease was first described in 1840. It is preeminently a disease of early childhood. It is very rare before one year of age and after four. Most cases occur between the ages of two and three. It is also possible for cases to occur in early adult life. As exciting causes cold and trauma have always been considered preminent, but the disease seems to be so evidently an infectious one that it seems we must disallow their weight in that connection. It often occurs in certain communities and as an epidemic.

The classical description that is found in the older text books may now be considered void. Instead we see a disease with a sudden severe onset, often convulsions, with a high fever, vomiting, stupor or delirium. This stage may last from a few hours to several days with no diagnostic symptoms and often no hint as to the nature of the affection until the typical paralysis shows itself. Holt has recently made a study of thirty-five epidemics which includes all of the reported epidemics except the one in New York of last year which is by far the largest to date. His conclusions are of great interest, and it may be well to review them briefly.

The first epidemic on record was in Louisiana in 1841, and included ten cases, all in children under two years.

These epidemics have occurred all over the civilized world, but it is interesting to note that five have taken place in Norway

in the last ten years. The epidemics have been mostly small even when compared with this in our city. Of the thirty-five epidemics reported, twenty-three have been of less than twenty cases; seven from twenty to fifty cases and only four over one hundred. In the epidemic of 1905 covering all Norway there were seven hundred and nineteen cases, and in that of 1906 three hundred and thirty-four cases but these occurred in ten separate localities or districts. Thirty-three of these epidemics took place during the three hot months, July, August and September, always terminating with October. This disease does not resemble epidemic cerebro-spinal meningitis in that sporadic cases follow on the heels of an epidemic; in fact there are very apt to be no cases in a locality in the year after an epidemic. One exception was in an epidemic in Italy. In Norway in the epidemics of 1903, 1905 and 1906, in each year separate localities were affected. Location and hygienic surroundings do not seem to determine cases, nor does it seem to be associated with or follow other diseases. In some epidemics it has been said to follow enteritis, but this can be explained by a late diagnosis. In our cases it has been noted in several instances that the child was first attacked with a sore throat. This is of interest in connection with the theory of an invasion by way of the digestive tract.

It has also been said in several epidemics to have been associated with Landry's paralysis, meningitis and acute encephalitis. In the cases of meningitis and encephalitis this can be explained by a very excusable mistake in the early diagnosis.

In the case of Landry's paralysis I should like to take issue a little more at length. I am of the opinion that what we have is this: A severe case of polio-myelitis in which the early motor symptoms are rapidly followed by the attack by the disease on the medulla with death following.

Gordinier in a recent report of two cases of Landry's paralysis with recovery says: "Landry's paralysis is an acute inflammation characterised by an ascending flaccid paralysis beginning in the lower extremities, extending to the upper extremities and the trunk, and terminating in death from respiratory or cardiac paralysis. The course of the disease may be reversed. The temperature is usually normal and consciousness retained until the end. The diagnosis can be made from polio-myelitis by the manner of onset and by the atrophy if the patient live long enough." In Landry's paralysis there is no pain as a rule.

Multiple neuritis is some times diagnosed in cases of polio-myelitis with severe pain. The mortality statistics of polio-myelitis are unsatisfactory, due to the before mentioned errors in diagnosis. It is not said to be a very fatal disease but probably some die before the condition is recognized. In epidemics there seem to be more cases in adults and larger children. Is the disease contagious? Holt shows that in many epidemics it would seem to be. He cites cases in which it occurred in groups and a number of cases in a family. Also many secondary cases ten days after exposure to a primary case.

The paralysis of polio-myelitis is complete from the beginning. It may involve one leg, one arm, both legs, a leg and arm, or all four limbs. Duchenne gives a classification as follows, which I compare with these of ours:

	Duchenne's Cases	Our Cases
1 leg	55 0-0	33%
2 legs	16 0-0	20%
1 arm	16 0-0	8%
2 arms	0-0	4%
Crossed	2 0-0	0%
Hemiplegia	1 0-0	14%
Total	1 0-0	12%
	1 arm 2 legs	6%

This paralysis is also a flaccid paralysis that is followed by degeneration, atrophy of the muscles and other tissues, and characterized by the reaction of degeneration.

In the first stage all reflexes are lost in the affected part but they soon begin to return. Pain is sometimes present to a marked degree; in other cases entirely absent. There is also in some cases an acute sensitiveness of the affected muscles. Skin sensibility is normal. There are no psychic phenomena connected with the disease. The skin of the affected member is cold, often ten to twenty degrees below the corresponding limb; and frequently cyanosed. The paralysed members do not grow to the size of the others. All these changes are due to trophic disturbances.

In the leg the muscles that are permanently affected are most commonly the peroneal and in the arm the deltoid group. Any group of muscles may be affected including those supplied by the cranial nerves.

Complete paralysis often persists for several weeks before improvement begins to be noticed. All muscles that begin to react to Faradic excitation after the paralysis has persisted for two weeks will probably recover their function. In this way we can generally give the anxious parents a fairly accurate idea as to the ultimate outcome. We should, however, be exceedingly careful to explain the probable occurrence of atrophy and contractures as these also can to quite a degree be predetermined.

The pathological lesion found upon autopsy is an acute inflammatory infiltration or inflammation of the anterior horns. Small thrombi occur with hemorrhages into the gray matter and a collection of leucocytes surrounds the blood vessels. This perhaps explains the sudden onset of the paralysis. The preference for the cervical and lumbar enlargements is characteristic of this disease. By some investigators this has been considered as due to an infective embolus of the anterior spinal artery, but this does not seem to be borne out by later findings. Forssner has demonstrated a phagocytosis of nerve cells taking place in the lesions of polio-myelitis. In many cases the result of examination of the cerebro-spinal fluid obtained by lumbar puncture in the recent epidemic in New York was entirely negative. It has been considered by some as due to the diplococcus of Mischelbaum, but this I think to be an erroneous view.

Dr. Flexner, of the Rockefeller Institute, shows that the cerebro spinal fluid was sterile in all cases examined in the epidemic of last year in New York, and contained no inflammatory products.

This, however, does not prove that the disease may not be due to an infection. General leucocytosis is usually very moderate. The meninges are also often involved with an acute infiltration of the pia mater. But without infection or the formation of pus. Sometimes in fatal cases there is found great congestion and phagocytosis of nerve elements.

Harbits and Scheele in their resumé of the subject consider it to be due to an infection by way of the digestive tract and thus through the lymphatics to the nervous system.

The clinical symptoms of this disease have been very much amplified since the days of the classical description by Charcot and we must bear in mind that many of the text books, particularly the older ones, give us a very poor picture of the affection as we recognize it to-day.

In the recent epidemic there have been a large number of fatal cases. Many of these have been of the type to be confused with meningitis and it is very possible that this has been done both recently and in times past.

The diagnosis of polio-myelitis is difficult and often impossible in the early stage of the disease. It can be made, however, more often than it is perhaps, if a little more care be taken. If in a child taken with pain, vomiting, fever, and showing no diagnostic symptoms of any other disease, there exist tenderness over certain muscles, and hyperesthesia, it should lead us to suspect this affection.

If the reflexes are absent and especially if the typical paralyses develop, there should be no difficulty. We may distinguish from multiple neuritis by the absence of any sensory disturbance. Acute myelitis may occur and be confused with it, but is rare in children. If there are bladder symptoms, sensory charges, and ataxia, we may decide in favor of myelitis, as none of these are present with polio-myelitis.

There are in some epidemics a large number of mild or so called abortive cases. To these we will refer a little later. This epidemic of 1907 on the contrary furnished an unusual number of a severe type and the report of 300 cases to the Hospital for ruptured and crippled also bears this out. Also in the New York epidemic there were a large number of cases of the meningeal type, although this might be explained as due to more accurate observation. In these cases as will be illustrated by the cases cited the paralysis is often delayed to the fifth to eighth day.

In cases which show great hyperesthesia and pain this symptom is probably due to an infiltration of the sensory nerve roots. Other cases show a great similarity to neuritis and may be mistaken for it. Another type exhibits signs of a profound toxemia. Still another type is the so-called abortive cases with a slight fever, some pain in the limbs, with muscular twitchings and no paralyses. These occurring with an epidemic are undoubtedly mild cases of the disease.

In some epidemics simultaneously with this disease are found acute cases of Landry's paralysis with death occurring from respiratory paralysis that are probably due to this same cause. We should remember in this connection that Landry's paralysis is not a disease, but merely a symptom complex.

In the cases of polio-myelitis taking place in the adult there is frequently greater involvement and more pronounced local subjective symptoms. This of course would be looked for in the adult as due to the more complex development of his nervous organism. It is likely in these cases, that there is involvement of the nuclei in the medulla.

The prognosis in this disease is usually good as to life. Death sometimes comes in the first stage. As to complete recovery from the paralysis this is quite rare. Of our series only five or less than twenty per cent. show it.

The treatment is simple. Of course, complete rest is of primary importance. This should mean two weeks in bed. During the febrile stage purgation, bleeding if indicated, the induction of perspiration, salicylates and belladonna. After this stage has passed, treatment is directed toward the restoration of function in the parts. Massage, gymnastic exercises, and the use of galvanism. After degeneration has begun the faradism of affected muscles is of service. Strychnine is often prescribed, but is of more than questionable benefit.

Among other things that may be discussed as treatment is the implantation of tendons to aid the lost action but this is a subject for a surgeon, as is also the application of orthopedic appliances.

We have here then collected twenty-nine cases that occurred in Schenectady in the summer of 1907. There are several items of interest to be observed in comparing this epidemic with other epidemics that have been reported. We have already seen the proportion in which the various limbs were affected. We notice also in this connection the very large proportion of severe cases that we find. Of the twenty-nine, two of the adult cases were fatal. If we exclude those we find ten or more than one-third of the total number that were classed by the attending physician as severely sick, as likely to die, as meningitis, etc.

We also note the few who made a complete recovery. Only five of the twenty-nine. As two were fatal, twenty-one are left as still crippled. Of these at this date the condition is as follows: Paralyzed in arm and leg, two; totally paralyzed, one; one arm, one; one leg, eleven; both legs, six. This seems to show that if an arm is affected at the onset its recovery is much more likely than is that of a leg.

Of four with hemiplegia, two recovered, of two with an arm affected, one recovered, one with both arms died. In two with

both legs and an arm, the arm recovered, one totally paralyzed, the legs partly recovered, one arm entirely so.

In regard to the age we note; under one year, two cases; at one year, three cases; at two years, eight cases; between two and three years, seven cases; at four years three cases, between four and eight years, two cases; between eight and twenty, two cases. Adults two. That is: nineteen of the twenty-nine were between one and three years; five between that and eight and if we exclude the two adults in whom the disease might be questioned, all but two are under eight years of age. I have been careful to exclude cases which were reported when the paralysis was of gradual onset, or cases where the history seemed to be of meningitis rather than polio-myelitis.

CASE NO. 1. Child, aged four. Seen first July 31st. Severe convulsions for many hours. Temperature 104 degrees. Vomiting and diarrhoea. Was very sick with all signs of a general infection. Developed an acute nephritis. Was looked for to die for some time. At the end of about one week was seen to be completely paralyzed at all four extremities. After about two months, one arm began to improve. Is still helpless.

CASE NO. 2. Boy, aged six months. Was feverish for three days when it was seen his right leg was paralyzed. Has now recovered except for peroneal muscles.

CASE NO. 3. E. W., male, single, machinist, American. Family and personal history good. Large healthy man, aged twenty-eight, weight 180 pounds. Disease began with a severe chill and headache. Temperature 102; pulse 120. Complained of backache. On second morning when he awoke he was unable to move either leg, but could his arms and head. On fifth day head was retracted, neck stiff. Temperature 104.6; pulse 146; respiration 40. Was moved to hospital. Removed to his home on ninth day and died suddenly on the eleventh day from respiratory and cardiac paralysis. The paralysis having first involved the arms, abdomen and chest. This case of Landry's paralysis seems from its onset and type of course to have been a polio-myelitis.

CASE NO. 4. August 23, '07. A. K. S., six months. First symptom was a great irritability, pain, crying on being handled. This lasted for two or three days during which time there was diarrhea. Temperature 99.5 to 101; pulse 130. The child then became semi-comatose, difficult to rouse, ate nothing for one week, no vomiting, could not swallow. At the end of one week was totally paralyzed; could not cry, could only breathe and move its eyes; remained in this condition for two or three weeks. First voice returned, then could wink. About four weeks after the onset first moved the fingers of right hand. Then next the head in a few weeks, next the left hand and then left toes.

Present state: Moves arms and head. Left hand is rather weak. Legs are paralyzed, cold, flabby, moves right toe and foot a little. Bowels and bladder normal. Eats, grows and feels well.

CASE No. 5. Walter H. L. Two years and two months old. English. Seen September 12, 1907. F. H., youngest of six children. Two died in infancy of meningitis. Tubercular taint. Child was taken suddenly ill in forenoon with twitching of body and limbs and eyes rolled up, vomited, became semi-conscious in a few hours and developed a fever of 103 by night. Complete paralysis of both legs and left arm developed in twenty-four hours. Vomiting and fever lasted three days. Paresis of the intestines lasted six weeks before a natural movement was obtained. Improvement of movement was very slow. In left arm began in four weeks. April 20, 1908, no difference in the two arms. Legs began to show improvement in January, but has been very slight. Most in left leg. Child now creeps, but is unable to stand. Legs are flabby, mottled and cold. Reflexes absent in both legs.

CASE No. 6. Mildred A., aged one year. Swedish. Congress Street, October 1st, 1907.

F. H. Youngest of a large and healthy family. Well in the morning, became dull and sleepy toward noon. Six P. M. began to vomit and soon went into a convulsion lasting till eleven P. M., One A. M. fell asleep. Next morning showed complete paralysis of left side. Temperature was very high, 105 till third day when subsided. No more vomiting. Paralysis unchanged until November 1st. Since then steady improvement, arm beginning first. Child was walking by aid when taken ill. Has had to learn again. Has now walked five weeks. Stumbles much from drag of toes. No difference as to size, color or temperature of limbs. In arm biceps and deltoid show some atrophy. Marked difficulty in grasping objects due to paralysis of extensors of wrist.

CASE No. 7. Adeline M. French. Two years and two months old. Chrisler Avenue, July 28, 1907.

Family history, two children dead, one a blue baby. Father a drunkard, mother drinks. Child complained of being tired at ten A. M., went to bed and awoke crying, vomited and purged, became irrational and developed a temperature of 101. Next day better, but could not use right leg. Improvement rapid and child began to creep in about three weeks. 1st of September walked with marked limp. Leg is smaller, flabby and ankle weak with a tendency to talipes varus. Is wearing a brace. Reflex absent.

CASE No. 8. Boy, aged three years. Seen in July. Parents both alcoholics. Sister deaf mute. Seen first May 5, 1907. Just recovering from a severe convulsion. Temperature 103; pulse rapid and full. For a few hours previous had had a slight headache and some malaise.

Following the convulsion there was some pain in the back and legs for two days and on the fourth day the right leg was noticed to be moved with difficulty. At the end of two weeks, however, the child

could walk. Electrical reaction was typical. The child can now run, but has the common flail foot.

CASE No. 9. Grace W., aged two years. Family history good. Was attacked July 6, 1907. Was taken with a convulsion, a temperature of 103 and became immediately comatose, neck rigid, cried when lifted or handled, refused food, was constipated, urine very scanty. A diagnosis of meningitis was made of a not to be determined type, no symptoms of compression, and the child remained in statu quo for a week or ten days. Temperature kept up, etc. Sometime during this time a paralysis of both legs appeared but the child was so seriously ill that it was not recognized until she began to improve. She still was very sore for several weeks, complained of pain in the legs and back, and on being moved. After five or six weeks it was seen that the paralysis was limited to the ant. tibial muscles and the quadriceps extensors. She gradually learned to walk after several months of treatment by massage, electricity and osteopathy. Present state, complete recovery except peroneal muscles of right leg. Babinski present.

CASE No. 10. E. R., aged twenty months. Was taken sick about August 1st, with a slight convulsion and a temperature of 102. Temperature remained up for about four days during which time the child showed signs of considerable meningeal irritation so that a tentative diagnosis of meningitis was made. Was very stupid, refused food, whined and cried, neck rigid, and constipated. With the subsidence of the fever appeared a complete paralysis of both legs. This persisted for about two weeks, when it began to gradually clear up and when six more weeks elapsed there remained no sign of the illness, except some weakness. The child to-day is as good as ever.

CASE No. 11. Mr. L., a student in the test was first seen on August 12, when he visited me in my office. He complained of pain and stiffness in the neck. Held his head in a peculiarly erect position. A diagnosis of myalgia was made and an application ordered. The next day he appeared again saying that the pain was gone but the stiffness remaining. On the following day I was sent for to come to his boarding place and saw him at three P. M. Found him with a temperature of 103 with headache and the pain again in his neck. Ordered him to bed and prescribed Gels. and a cathartic.

Upon visiting him next morning found him very cheerful. Temperature 99, no pain, wanted to get up. Neck, however, was still stiff and face very much flushed. That night a friend called on me in the evening and said that the boy could not move his arms and that he was much alarmed about himself. I laughed at his fears, gave him some bromide to administer and promised to call in the morning. The next morning found that he had told the truth as his arms, shoulders and chest muscles were completely paralyzed. Temperature was 99. Could only move his fingers, could not turn in bed, had great difficulty in swallowing or talking. Diaphragm was working well but with difficulty to keep his lungs full. Boy was cheerful but

somewhat anxious. I advised his friends to send for his mother who lived in St. Lawrence county and told them that when she arrived I would come up. Saw him in P.M. Much the same but somewhat cyanosed. In the evening received a message that his mother had come. Upon reaching the house found the young man just lapsing into unconsciousness and in a few moments he died, respiration failing some little time before the heart. There was no loss of sensation, but arm reflexes were gone.

CASE No. 12. Boy, four years of age. Seen in September. Lives on Mont Pleasant. Was taken with a convulsion and fever. No distinctive symptoms for some days. Pain in head and neck, and fever. After four or five days became paralyzed in the arm and leg of left side. Was helpless in bed for about three weeks when improvement began to be noticed and from this time on was steady.

Arm has made a complete recovery and there remains only a very slight limp in the leg.

CASE No. 13. Girl, eleven months old. Italian, Romeyn Street. July, 1907. Child was sick four or five days with a mild fever. Was then seen to be paralyzed in the right leg. There is now atrophy of the calf and is unable to walk.

CASE No. 14. Girl, three years and six months old, in Duanesburg. After going in swimming was taken ill with fever and pain for a few days and developed a paralysis of both legs. Now creeps.

CASE No. 15. K. aged eight years. Seen first August, 1907. Fever and vomiting, which lasted for several days. Boy complained much of pain in the back and legs, both paralyzed. Had very severe head symptoms, was much annoyed by noises and motion. Kept in bed three or four weeks. After that learned to walk gradually. Now runs and plays but has considerable paralysis of the extensors of both legs.

CASE No. 16. Harold R., aged six years. Seen in August, 1907. Was feverish and kept his bed for one day. When seen on the second day complained of severe pain in the right leg and upon examination was found to be paralyzed. Fever lasted four or five days when it disappeared with the pain. After about two weeks improvement began as to motion and kept up until all the leg had recovered except the peronei and tibialis ant. Is still making some gain this date, May 6th. Using electricity and massage. Can run and walk, has flail foot.

CASE No. 17. Walter L., Pearl Street, age two years and two months. Was taken ill September 12, 1907. Cough, fever, short breath and anorexia. Dullness and rales over base of both lungs. Lungs cleared in about ten days when a marked paralysis of left arm was noticed, followed in two days by a complete paralysis of both legs. Child restless, cried constantly. Conscious at all times. Reflexes absent, legs cold and cyanotic. Arm soon regained its strength but legs not.

May 6th, 1908. Child in good condition, arm normal. Legs are both limp and absolutely useless. Child is unable to stand but can creep. Legs are bowed and feet turned outward. Tendon reflexes absent.

CASE No. 18. J. S. Boy, aged three years. Seen in July. Taken suddenly ill during the night. The next morning was unable to walk. Pain in the left knee. Second day of illness temperature, 103.5; pulse, 120; leg pained for one week. Developed a paralysis of peroneal muscles. Was treated with a brace and has lately been operated on by Dr. Elting of Albany, with result of complete restoration of function.

CASE No. 19. Child, two years. Strong St. Played all day and went to bed. In the morning was seen to be not able to walk. Right arm and leg totally paralyzed. Temperature 100. Was sick for three or four days then began to improve and in a few days was totally recovered.

CASE No. 20. Two years child was first seen as paralyzed on one side. Complained much of pain on movement. Paralysis was flaccid and cleared up in a few days.

CASE No. 21. Child, aged one year and six months. Seen first in June, 1907. Slight attack of tonsillitis. Fever for five days moderate. On third day was noticed to have lost use of left arm. Has made a complete recovery.

CASE No. 22. W. B. Aged fourteen years. First seen August 4, slightly indisposed. Had a slight sore throat, some fever and headache. Was put to bed and after the end of about a week was seen to be paralyzed over the whole of right arm. Improvement soon began but there is still loss of use of muscle of shoulder and upper arm. Treated with Faradic current and massage.

CASE No. 23. Child of three years. In May or June of last year, mother noticed first that it could not walk. Had been a little feverish and peevish. After a few days lost the use of both legs. The right soon began to improve and soon became quite right. The left has recovered with the exception of the peroneal and tibials. Has a flail foot.

CASE No. 24. Boy, two years and six months of age. Was not ill, no fever. Was first seen to be not able to use left leg.

Made a complete recovery with little treatment and now seems to be quite normal.

CASE No. 25. H. M., Foster Avenue. Age three years. Four months ago patient had a slight fever, and was sick four days, after which the mother noticed that the leg was paralyzed. For the first three weeks she could not walk at all—she improved a little so that she could walk and drag the leg, but has since shown no improvement.

Present condition. Well developed, well nourished, healthy looking, appetite good.

Chest neg.

Partial paralysis of right leg with flail-like motion on walking. Slight atrophy of thigh.

Left thigh at point five centimetres, above patella measures twenty and a half centimetres.

Right thigh measures nineteen and a half centimetres.

Left calf eighteen and a half centimetres.

Right calf seventeen centimetres.

No shortening of leg.

CASE No. 26. Baby Z., 214 Park Avenue. Aged two years. Five months ago baby was sick with slight fever, for a day or two, after which parents noticed that she could not walk. It took her about two weeks to learn to walk at all and ever since the right leg has been weak.

Well developed, well nourished, walks with a distinct limp as though the right leg was weak. Joints O. K. Leg from the knee down atrophied, especially in the region of peronei muscles.

Right foot can not be raised or inverted voluntarily.

Diag. Paralysis, Post Ac. Ant. polio-myelitis.

Rx—Massage—leg. Later appliances.

CASE No. 27. J. A., aged two years. Always a healthy child. Seen June 15, 1907. Temperature, 102.8; pulse, 140. Some bronchitis. Abdomen distended, constipated, tongue clean. Adenoids and large tonsils. June 22, child improved. Leg and foot swollen. Complains of pain at ankle. Temperature, 99; pulse, 130. Has an eruption all over the body. Complete paralysis of the right leg persisted for some months. April, 1908. Child can walk. Loss of peroneal muscles foot drop.

CASE No. 28. A. J. Seen April 3, 1908. Three years of age. Family history negative. Present history. About ten months ago was attacked with a mild fever, followed by a rapidly progressive paralysis of the four extremities. Parents say a gradual improvement since.

Present state. General condition good. Intelligent but petulant. Eyes normal. Left arm and leg well developed and all reflexes normal. Right deltoid somewhat atrophied. Unable to raise arm at all. Movement of extensors of right hand somewhat slow and clumsy. Right leg cold, undersized and cyanotic. Is unable to stand. Reflex abolished in achilles and quadriceps (?). Babinski. Sensibility poor. Not tested electrically.

CASE No. 29. Blanche T., aged nine years. Family and personal history good. Was always slight of build and rather frail. Had children's diseases. For two weeks previous to attack was noticed to be peevish and to blink her eyes and complain of the light. Illness began July 4. About seven P. M., said her legs were weak. At nine was taken with projectile vomiting, lasting through the night. Temperature, 103.2. These symptoms persisted for two days, on next day was awakened by nose bleed, had a diarrhea and a stiffness of

all the muscles above the hips, which became severe enough to cause opisthotonos lasting ten days. This developed on Sunday, and on Monday legs and feet were paralyzed. This soon extended to all the body excepting only movements of the eyes, the speech. No involvement of bowels or bladder. Swallowed well. Temperature about 101 for four or five weeks. Treatment was strychn. protonuclein, massage and vibration.

Improvement was gradual downward from the head. Now has good use of neck, shoulders, back, and partial use of the arms and fingers. Moves legs but cannot stand.

A NEW METHOD OF PRODUCING LOCAL ANAESTHESIA.

By GEORGE E. BEILBY, M. D.,
Assistant Attending Surgeon, Albany Hospital.

Within the last few years such advances have been made in the technic and application of local anaesthesia that already, in the hands of those skilled in its use, it has a wide range of application in major surgery.

By the use of the less toxic derivatives of cocaine and the demonstration by Schleich of the possibility of perfect and painless anaesthesia by infiltration with weak solutions of cocaine (0.1 per cent. or less) one of the greatest drawbacks to its employment was removed. Its field of usefulness, however, is still subject to many limitations so that we should welcome any improvement in technic or addition to our knowledge of the subject.

We now have three well recognized methods of producing local anaesthesia by the use of cocaine or one of its equivalents:

First. The *infiltration method*, in which the tissues to be incised are directly injected with the anaesthetic solution. This method has perhaps the widest range of application.

Second. *Regional anaesthesia*, in which the proposed field of operation is rendered anaesthetic by the injection of the sensory nerve trunks supplying this area. While this may be said to be an ideal method its possibilities are necessarily limited, due to the fact that in but few areas of the body does the sensory nerve distribution lend itself to such injection.

Third. *Spinal anaesthesia*, in which the drug is injected into the lumbar subarachnoid space and comes in direct contact with the posterior nerve roots thus rendering the lower limbs and

trunk anaesthetic up to a variable level.* This method has attained great popularity in many of the European clinics where it is the method of choice even in all abdominal operations below the umbilical level. The lowering of blood pressure, the nausea and the headache which usually follow are features which have not as yet been eliminated and are drawbacks to its routine employment. In our own country in the clinics where general anaesthetics are well administered their use is attended with so little danger in most cases that I believe spinal anaesthesia is not destined to attain great popularity. Here conditions rendering a general anaesthetic dangerous would often apply with equal force to spinal anaesthesia. Therefore for our local anaesthesia we were largely dependent upon two methods; the intraneural or regional method which is very limited in its application as I have already pointed out and the infiltration method which at the best has no wider range than the skin and soft parts.

It was my opportunity while in Berlin this summer to witness in the clinic of Prof. Bier the application of a new method of local anaesthesia which he had just presented to the German Surgical Congress. Bier terms it the method of *indirect local anaesthesia*. It apparently can only be applied to the extremities, but even this is a marked step in advance for bone and periosteum are thus anaesthetized as well as soft parts. It is likewise interesting from a physiological standpoint and is a valuable contribution to the subject of local anaesthesia.

Briefly, Bier's method is as follows: The limb is first rendered bloodless by the application of an Esmarch elastic bandage while the limb is held in an elevated position. A tourniquet is then tightly applied above and below the proposed field of operation. Under infiltration anaesthesia a principal vein or one of its tributaries is exposed in the distal portion of the operation field and its lumen opened by a small longitudinal incision. In operations upon the knee-joint, for instance, the internal saphenous vein may be made use of. A canula is then introduced in the vein and made secure and from 50 to 100 cubic centimeters of a one-half per cent. novocaine solution is introduced, the injection of the solution being made under considerable pressure. By thus making use of the veins as a medium the anaesthetic solution is carried to all tissues, including periosteum and bone, which lie between the proximal and distal tourniquets. In from three to five minutes complete anaesthesia is obtained which continues for

a length of time sufficient to perform any operation. At the completion of the operation before the removal of the tourniquet the novocaine solution is allowed to escape from the vein and as an extra precaution the veins may be washed out with saline solution. This method of anaesthesia has the advantage of being applicable to any operation upon the limbs where a segment may be thus anaesthetized. Properly employed it is apparently without danger. But one should bear in mind that the quantity of drug used amounts to a toxic dose if allowed to enter the general circulation.

The principle which Bier has made use of is interesting from a physiological standpoint and I have no doubt the method will be found of value in a certain class of operations.

THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT,
MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND
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(Continued from September Annals, page 742)

CHAPTER XVIII

The idea that her thoughts were heard was the delusion that caused Ruth more trouble than any other. It was a constant torment to her, having become so firmly fixed in her mind that she could not drive it away, although her better judgment told her that she must be mistaken. Dr. Field had told her to entrust her troubles to him, and he would try to help her. She deter-

mined to do so, and for that purpose asked for an interview when he had leisure. He met her with a smile.

"Well, what is it Ruth?"

"There is something troubling my mind that I cannot bear any longer."

"I have thought something was disturbing you, and have waited for you to speak."

"Will you answer me truthfully, doctor, no matter how hard it may be for you?"

"Most certainly, I will."

"Can you hear what I am thinking?"

"Why! no indeed," replied the doctor, "Why do you ask?"

"Because for years I have been sure that all my thoughts were heard, and it is terrible. You would not like to have every thought that enters your mind heard by those around you."

"Do you hear what others think?" asked the doctor.

"No, certainly not."

"Why should you be different from other people?"

"I do not know. That I am makes it all the harder to bear. I am sure it is so, for many things have happened to strengthen my belief. Often those around me show plainly by their actions that it is so."

The doctor did not ridicule her. He could see that it was a serious matter to her, and he chose his words carefully.

"I think I can understand," he said, "how very hard that would be to bear, but you may rest assured that you are mistaken."

"If I am, I shall be very thankful. You cannot know what a terrible trouble it has been to me. The very idea that I was heard, seemed to drive strange thoughts into my mind, which otherwise I would not have had. I was sure I was making trouble for others, by telling everything I had ever heard, or read of. I thought everyone hated me, and I earnestly desired to end my life, but whenever I saw a possible chance, those around me seemed to know about it, and that would prevent my trying."

"That was very singular," said the doctor, "but perhaps you would have been successful if it had not been for the delusion, and so there has come some good from it."

Ruth looked as though she did not feel quite sure about that, although she did not say so.

"How long have you had this delusion?" asked Dr. Field.

"Before I came to the hospital I had, what I now know were

delusions, and for a long time I grew worse instead of better. Many strange fancies crowded my brain. Gradually my troubles overcame me, my suffering drove me to despair, and I lost the power to speak or to wait upon myself, and in that way I drifted into the habit of talking within myself, as it were. The long years went by, and although I was kindly treated by most of those who cared for me, they could not help me. At last you came, and Miss Ray, and the girls that care for me now. Something in your manner attracted my attention. You always had a pleasant word for me, even though I did not answer. I listened to every word you spoke, and watched your actions closely, although my eyes were often closed. I grew to have confidence in you. I do not mean to cast reflections upon the other doctors, who have cared for me. I have no reason to, but I know that you have helped me more than anyone else. My own sisters could not be kinder to me than are Miss Ray and the attendants, and I think, God sent you here to save me."

Dr. Field listened with great interest while Ruth was speaking, and then said kindly.

"I am glad that you have told me this. When we fully understand a patient's troubles, we know better how to help them. Yours is a very singular case, but I hope the most of your trouble is over. I am very glad it has been my good fortune to help you, and now about the delusion you speak of.—It is simply an impossibility, and as you grow stronger you will know that I am telling you the truth. Don't brood over anything, but come to me with your troubles. I expect you will go home soon. I shall write to your husband that you are well enough to see him."

"Do you think," faltered Ruth, "that my friends will want me with them, after all this dreadful sickness? do you think they will be ashamed of me?"

The doctor laughed. "Your husband will be the happiest man alive, and the boys will be delighted. They would have been here before now, if we had thought best. We want you to be a little stronger, so there will be no going back."

"Do you think there is danger of that?" asked Ruth.

"Not after you once become strong and well. Yours is not a case of hereditary insanity, but simply a sickness that affected your brain, from which you will entirely recover. You have good judgment and will-power, and these will carry you through

safely, if you trust your friends to aid you. Make up your mind to do this, and look forward to years of usefulness. You are now in the prime of life, and you are needed in your home and in the world. Keep busy and cheerful, and you will come out all right."

With these kind words of encouragement, the doctor left the room.

Ruth thought over all he had said, and resolved that she would try to realize what he had bade her hope for. She did not expect her troubles would take flight in a moment's time. She knew that she must fight her battles over and over again. Thinking of her present condition in comparison with what it had been gave her courage. God helping her she would gain the victory, and be herself once more.

The next day was the Sabbath. After the services in the chapel, which Ruth did not attend, she was invited to visit Miss Ray in her room. It was a pleasant, homelike place, quite different from the rooms occupied by patients. Ruth stopped to admire a beautiful boquet of roses, that was in a vase upon the table. When she was seated in an easy chair by the window, Miss Ray placed the flowers upon the low window-seat, saying,— "They are yours, Ruth. The doctor brought them from the chapel for you."

The doctor came in and visited with them a while, reading aloud the story of "Perseus and the Gorgons." The afternoon passed quickly away.

Ruth's friends planned many pleasures for her. She went out walking or riding every pleasant day, and each day brought returning health and strength. The attendants were much interested in her recovery, and she received many favors from them. In return, she enjoyed helping them with their work. She considered it a privilege to be allowed to assist in carrying food to the sitting-room patients, and, when Dr. Field called her services into requisition to repair a vest for him, she was highly favored.

Ruth tried to be friendly with Ellen. Sometimes the girl would drive her fiercely away, while at other times she did not reject her advances.

One day, as Ruth sat in her room engaged in sewing, Ellen entered, and bending over, pressed her face against Ruth's cheek. Ruth felt Ellen's tears upon her face, and putting her arms around the girl, asked,— "What is it Ellen? Can you tell me?"

Ellen made no reply, but Ruth understood. She knew there were griefs that could not be spoken, and she knew, also, the value of a kind, sympathetic word.

When Ruth was allowed to go into the sitting-room she always spoke a word of cheer to Mrs Doane. She sometimes sent a flower, an orange, or some other trifle, to tell her that she was remembered, and one day, when the doctor asked Mrs. Doane if she would like to thank Ruth for the gift, she bowed her head. When Dr. Field delivered the silent message, he added,—

“I am greatly encouraged about Mrs. Doane. I think your example has done her good, and you must help her all you can.”

Ruth tried to interest herself in reading, but found it hard to do so, for her thoughts wandered far away. The sorrows, doubts, hopes and fears of her own life, and of the lives of those around her were stories of real life, that made works of fiction tame.

Dr. Field visited Ruth, one afternoon, with a book in his hand, and seating himself by the window, he said pleasantly,—

“I have a leisure hour, and have come to read to you; that is,—if you wish me to.”

“Most certainly I do,” replied Ruth.

The book was “Abbott’s History of Peter the Great.”

After reading a few chapters, Dr. Field handed the book to Ruth, saying,—“You can read farther, and when I come again, tell me what you have read, and I will go on from there.” In this way the book was finished, and Dr. Field noticed with evident satisfaction, that Ruth clearly understood and remembered. He then brought Dickens’ “Tale of Two Cities” for her to read, saying, as he gave her the book,—

“One of the characters has a mental trouble that reminds me of you.” This awakened an interest in Ruth’s mind, and she eagerly read the book.

Ruth was now a paroled patient, having the privilege given her of going out upon the grounds around the building, whenever she chose, if she told the attendant where she was going. With the Matron she visited the laundry and kitchen. A kitchen where food was prepared for nearly a thousand people was considerably larger than Ruth was accustomed to. It was kept in perfect order, and the work was done in so systematic a manner that it was like clock-work. Mr. and Mrs. L., who had charge of the place, received Ruth kindly, and she soon felt quite at home there. She had permission to come and go as she pleased. She made

herself useful by picking over beans and raisins, cutting apples, and doing other light work. Sometimes they trusted her to mix the egg and milk for wards. She liked best to go there Saturday morning, for on that day she was the only patient there, and she helped Mrs. L. make pies for a private dining-room. The pies, bread and cake for the wards were made in the bakery, which joined the kitchen. Three barrels of apples were required to make pies for one meal, and nearly as many for sauce. Two thousand eggs were cooked for one breakfast. They were steamed in large boxes.

Mrs. L. often gave Ruth apples, raisins and other dainties, which she carried to the ward and divided among her friends.

Dr. Hale visited Ruth, and encouraged her by saying she could soon go home.

It was customary in the hospital to move patients from one ward to another, as their diseases varied. The superintendent proposed to Dr. Field, that Ruth be removed to "Ward Two." Dr. Field spoke to Ruth about it, saying,—

"Dr. Hale thinks you had better go, because the patients are more quiet there, and you will have no stairs to climb. What do you think about it?" Judging from the look on Ruth's face, the question was needless.

"Do you wish me to go?" she asked.

"That is not to be considered, replied the doctor. "If it is best for you, of course I wish you to go."

"But it is not best for me," replied Ruth, very earnestly. "The patients here do not trouble me, for I am used to them, and I like the attendants. I am sure I should be homesick, and you do not have charge of the ward."

"No, but Dr. M. does and he will be very kind to you."

"I do not doubt that, for he has been very kind to me, but I had much rather stay here, if I may, until I go home. Please ask Dr. Hale to allow me to stay."

"Well," said Dr. Field, "I think he will not object, if you prefer to remain here. I did not wish to influence you, but shall be glad to have you stay in this ward. And now I have something more to say to you. I have written to your husband that he may come and visit you, and that he may expect to find you nearly well. You can look for him in a few days. Do not allow yourself to get nervous and excited thinking about it, but remember that self-control is your safe-guard."

CHAPTER XIX

After Ruth's conversation with Dr. Field it was not strange that her mind dwelt upon the coming meeting with her husband and children. It had been five years since she had seen her boys. Perhaps they would come with their father again. Would they call her mother and be glad to see her? There could be no greater joy in store for her, than that.

Through all the long years of her suffering she had not thought of the change in her own personal appearance. After she had so far recovered as to be able to walk, she had crossed the room, and had looked in the glass. A faintness had come over her when she saw the face reflected there, and when the first shock was over she had wept bitterly, in very pity for herself. In the months that had passed since then, she had been constantly improving; so that now she was more like her former self, although the ravages of sickness could never be altogether effaced. Thinking of the sorrow and trouble she had caused her friends, she made a firm resolve, that, if she was permitted to return home, she would be brave and cheerful. Leaving the past behind her, she would devote the remainder of her life with all the strength she might have to the good of others.

Even sooner than she expected, Ruth was summoned to the reception-room to meet a visitor. Her heart beat fast, and her limbs trembled. The doctor was not there to encourage her, having gone to the city that morning. When she entered the room, she saw, instead of her husband, a young man who met her with out-stretched arms.

"Is this my mother?" she heard him say, and the next moment she was clasped to his heart in an affectionate embrace. It was her son. He called her mother.

Love had bridged the years of their separation, and he was again her own dear boy. In a few words he explained to her that his father was absent from home, when the doctor's letter was received, and he had come without waiting for him to return. Ruth was allowed to take her son to her room in the ward. He had but a short time to stay, as he was obliged to return home that night. Ruth could not say what was in her heart. Words are sometimes so poor and empty. She sat with her hands in his, and her eyes fastened upon his face, listening to every word that he spoke. He told her how much they had missed her, and how

glad they would be to have her with them again. Father would come very soon, and bring Walter to visit her. She could go home soon, and in the meantime, they would make a home ready for her.

Ruth proudly introduced her boy to the attendants and the patients. The time came all too quickly when he must go. Promising to write soon, he left her, and Ruth watched him as he went down the avenue, and worried, as mothers will, lest he should not reach the station in season for the train, and so be obliged to stay over night in the city, quite forgetting that he was now old enough to take care of himself.

Dr. Field came in soon after, and told Ruth that he met her son as he was leaving the building, and had spoken with him.

"He has a good face," the doctor said, "and I like his appearance. And now, I suppose you wish to go home," he continued.

"Yes, I wish to go, and be with my husband and children," replied Ruth; "yet I dread going out into the world. I have been here so long that I know nothing about life outside."

"That will all come right in time. When you meet your friends, and see how glad they are to have you with them again, you will take up your life where you left it, and go right on."

"Not where I left it, doctor, for that is impossible; but if I can be of some use the remainder of my life, I will not complain."

The days now passed swiftly to Ruth. After Will returned home, he sent to his mother, photographs of his father, brother and himself. The doctor brought them to her early in the evening, and she enjoyed looking at them until the lights were extinguished. She slept that night, with the pictures of her loved ones next her heart, and once, when the night-watch looked into her room, she asked her if she would hold her lantern, so that she could see them, just for a moment. The request was kindly granted.

It was not many days before Ruth received a visit from her husband and Walter. Ruth's sister Mary was with them. As this is not a work of fiction, we will not dwell upon the meeting of Ruth and her husband. In real life, such scenes are sacred. Enough to say, that they met with their hearts filled with gratitude to God, that they had been brought safely through a terrible ordeal.

Ruth's sister brought nice cake and fruit, and what Ruth prized more, a picture of her old grey-haired father. With it came a pocket-book containing a generous sum of money, all of which he had sent her with his love.

The dear old father that she had thought never to see again was waiting to welcome her home.

There was one of whom they did not speak, and Ruth guessed the reason. It was the aunt who had been a mother to her since childhood, and she thought with keen regret of the sorrow her sickness had caused this dear friend.

Ruth watched Walter, as he went from one place to another, sometimes talking with patients on the ward, apparently as interested in them as in her.

"Don't mind Walter," said her husband, "he was so young when you came here, that he hardly remembers you. You will be the best of friends soon." When it was time to go, the good-byes were cheerfully said and Ruth was assured, that they would soon return for her.

It was now the middle of April, the time for fresh hope and new life. The weeks that followed were busy ones for Ruth. It was beautiful to be able to work, to have hope in her heart, and with it courage and the power to do. From thinking that she had no friends, every one whom she met seemed her friend, and there was no lack of kindness shown her.

Better than all, a sweet peace and trust had come into her soul. She hardly knew when or how. It was long since she had offered a prayer of words, but her heart was filled with gratitude to God for all his loving kindness and tender mercy. The way that she had thought so narrow and hard to understand, now seemed plain and simple. She need think no more, of creed or ritual, or pin her faith and understanding to another's. She would strive to live each day the best she could, doing the duties that came nearest her hand.

It is not to be supposed that Ruth had entirely recovered, either physically or mentally. She was obliged to rest often, and, when night came, her feet would be swollen and her limbs painful. If she made a misstep and fell, as she sometimes did, she could not rise without assistance. Of the battles she fought to conquer her mental troubles, no one knows but herself. However, she was gaining every day. When Dr. Field cautioned her about working too hard, she replied,—

"I have lost time to make up, doctor."

The doctor, knowing work to be a good tonic, allowed her to do as she chose.

There were many pleasures for Ruth, besides the work, which she enjoyed being able to do. One day it was a box, which came by express, from the sister that she had not seen for a long time.

The letter which it contained was read first, and it was filled with words of encouragement and messages of love, with the assurance that her friends were anxiously waiting to welcome her home. Besides the letter, the box contained material for a dress, some gloves, handkerchiefs, and various other useful articles.

"The same good sisters that they always were, how could I think that they had forgotten me?" was the question Ruth asked herself, while wiping away the tears which would come.

Beth kindly accompanied Ruth to the city, upon a shopping excursion. They started early in the morning and returned in the afternoon. A dress of soft, black cashmere, and other necessary articles were selected without any difficulty, but when it came to buying a hat, it was no easy task. The old saying that fashions renew themselves every seven years did not prove true in this instance, for Ruth was sure she had never seen styles so peculiar. There were cones, rectangles, triangles, turrets, and towers,—every shape, it seemed to Ruth's uneducated taste, but what was necessary for a simple becoming hat. Beth being patient, and the shop-girls obliging, Ruth succeeded in finding one which she thought she might venture to wear, although she was told it was quite out of style. After buying some trifling gifts for Mary and Lizzie, there was still time to spare, and an art store was visited, and other places of interest. Although Ruth was very tired, she was willing to acknowledge that she had enjoyed the day, even though she had been "out in the world among strangers."

The month of May had come, and the early flowers were opening. Nature and the gardener were assisting each other, and the grounds around the building grew more beautiful every day. In one of Ruth's daily walks she was joined by two little girls, who were about four and six years old. The years had been long since Ruth had seen and talked with little ones, and these seemed to her almost like Angel visitors. With the confidence of childhood, they were soon chatting freely with their new found friend, telling her that they were sisters and that they lived near by.

"Where do you live?" asked one.

"Just now, I live in the hospital," replied Ruth.

"You isn't crazy, is you?" replied the younger of the two, with wide open eyes.

"I hope not," replied Ruth, "I have been sick, but I am well now, and am soon going home."

"I'm glad you isn't," continued the child, "for mama wouldn't let us talk with you if you were."

Ruth assured them that she loved little girls, and that patients who were crazy were not allowed upon the lawn.

And so the varied incidents that came into Ruth's life, the happenings of each day, gradually fitted her for the new life that she was soon to enter.

Poor demented Lizzie often visited Ruth, who tried to interest her by reading to her, but found that pictures suited her better. She showed her the pictures of her husband and children. Lizzie looked at them awhile very earnestly, and then, keeping the picture of Walter in her hand, she gave the others to Ruth, saying,—

"Give this to me."

"Why Lizzie! That is a picture of my little boy, and I cannot spare it," replied Ruth.

A sorrowful look came over the girl's face, "I shan't ever have none of them," she said.

"None of what?" asked Ruth, somewhat puzzled.

"Them babies," said the girl. "I like them, but I shan't ever get married." Ruth was astonished. Did Lizzie have more thoughts than she was given credit for, or was this a stray gleam of intelligence? Putting her arms around the girl, Ruth kissed her, and said, "Surely there are beautiful things for you, somewhere, sometime."

One surprise that came to Ruth was more beautiful than all the others. Miss Ray brought to her room a good-sized paper box, saying,—“This came by express to you.”

Ruth opened the box and saw, inside the cover, the words, "Will to Mother." She removed the damp cloth that covered the contents of the box. May flowers! Oh how beautiful! The brightest and sweetest that she had ever seen, and Will had sent them. Miss Ray brought a large dish filled with water, and the flowers were placed in it. Twenty dainty bunches. The word went around the hall, and the patients crowded about.

Ruth separated some bunches, and gave a few flowers to each one. When she had remembered her particular friends, she had a few bunches left, which she was obliged to guard carefully, as the patients were not all particular about the rights of others. She prized her flowers even more highly after receiving a letter from Will, telling of the miles he had walked in the early morning to pick them for her.

(*To be continued.*)

Clinical and Pathological Notes

Puncture of the Medulla by a Hair Pin. By A. H. TRAVER, M. D.

I consider the following case of interest because of the peculiarity of the accident.

R. B., female, age 8. On July 31st, owing to the warmth of the day, fastened up her hair in the back of her neck by means of a common wire hair pin and lay down on a bed to sleep. While asleep she rolled out of bed, striking on the floor. She called her sister and told her that her hands felt funny, and asked her to rub them. While her sister was rubbing her she again said, "Why don't you rub my hands; you are not rubbing them?" This frightened her sister, and she called in a neighbor, who, in raising the child, found the hair pin penetrating the back of the neck about two-thirds of its length. The hair pin was removed with some difficulty. She was taken to the hospital where, on examination, it was found there was complete paralysis, of both motion and sensation, of the body from the neck down.

In the neck, just at the border of the hair, could be seen the two small skin punctures caused by the hair pin. The child died soon after reaching the hospital. There was no autopsy performed owing to the strong objections of the child's parents.

The history of this case sounds very much like reading the description of death as it is related in the dime novel, but nevertheless it is true and shows how easily death can result from a very trivial cause.

Editorial

For five days and five nights did Godwin lie speechless. And Harold watched over him night and day. And the leaches would not bleed him, because the season was against it, in the increase of the moon and the tides; but they bathed his temples with wheat flour boiled in milk, according to a prescription which an angel in a dream had advised to another patient; and they placed a plate of lead on his breast, marked with five crosses, saying a paternoster over each cross; together with other medical specifics in great esteem. But, nevertheless, five days and five nights did Godwin lie speechless; and the leaches then feared that human skill was in vain.

SIR EDWARD BULWER LYTTON, BART.

Harold, the Last of the Saxon Kings.

Knowledge of medicine is acquired only by the concentrated effort and experience of a life-time. Training begins in youth and never ends. As an incident in another profession medicine should not be practiced. Curious that an educated clergyman should adopt a new designation of an old concept, "subliminal," as a discovery; and should invoke a discarded method, "hypnotism," as a therapeutic means of grace. More curious that physicians should aid in the dissemination of a practice based on an erroneous judgment, which must throw discredit upon both divine callings.

Are the days of Paracelsus to return?

Iatrotheurgism

[illegible]

Births at Term.....	123
Still Births.....	6
Premature Births.....	1

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid fever	4	8	5	8	7
Scarlet fever.....	7	0	4	2	13
Diphtheria and croup.....	8	6	29	44	27
Chickenpox	0	0	4	1	1
Measles.....	1	4	10	11	1
Whooping-Cough.....	0	0	7	0	0
Consumption.....	2	2	2	11	42
Totals	22	20	61	77	91

*Contagious Diseases in Relation to Public Schools.**Non Reported.*

Number of days quarantine for diphtheria:			
Longest.....	44	Shortest.....	6
Average....	15	17-18	
Number of days quarantine for scarlet fever:			
Longest.....	79	Shortest.....	14
Average....	36	13-27	
Fumigations:			
Houses.....	60	Rooms.....	287
Cases of diphtheria reported.....			27
Cases of diphtheria in which antitoxin was used.....			27
Cases of diphtheria in which antitoxin was not used.....			0
Deaths after use of antitoxin.....			5

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive.....	2	4	20	28	22
Initial Negative.....	15	16	15	12	20
Release Positive.....	1	5	3	25	22
Release Negative.....	5	4	88	96	60
Failed			31	5	0
Totals.....	23	29	157	166	124
Examination for tuberculosis:					
Initial Positive.....	....	....	....	1	11
Initial Negative.....	....	....	....	2	6

BUREAU OF MARKETS AND MILK.

Wagons and milk in clean condition.....	20
Wagons and milk in unclean condition.....	0
Butter fats below 3%.....	1
Butter fats from 3 to 3.5%.....	6
Butter fats from 3.5 to 4%.....	12
Butter fats over 4%.....	1
Solids below 12%.....	1
Solids from 12 to 12.5%.....	6
Solids from 12.5 to 13%.....	5
Solids over 13%.....	8

BUREAU OF MILK.

No.	Specific Gravity	BUTTER FATS				SOLIDS.			
		Under 3%	3 to 3.5%	3.5 to 4%	Over 4%	Under 12%	12 to 12.5%	12.5 to 13%	Over 13%
3...	33.1	..	..	I	..	..	..	..	I
9...	34.2	..	..	I	..	..	..	..	I
54...	33.1	..	I	..	..	..	I	..	..
65...	34.1	..	..	I	..	..	..	..	I
94...	32.1	..	..	I	..	..	..	I	..
95...	34.2	..	..	..	I	..	..	..	I
96...	34.2	..	..	I	..	..	..	..	I
102...	32.1	..	I	..	..	..	I	..	..
147...	34.2	..	..	I	..	..	..	I	..
148...	32.1	..	..	I	..	..	..	I	..
157...	34.2	..	..	I	..	..	..	..	I
158...	33.1	..	..	I	..	..	..	I	..
160...	33.1	..	I	..	..	..	I	..	..
161...	34.1	..	..	I	..	..	..	..	I
163...	35.3	I	..	..	..	I	..	..	..
166...	33.1	..	I	..	..	..	I	..	..
169...	33.1	..	I	..	..	..	..	I	..
170...	35.2	..	..	I	..	..	..	..	I
177...	33.1	..	..	I	..	..	I	..	..
181...	32.1	..	I	..	..	..	..	..	..

MISCELLANEOUS.

Mercantile certificates issued to children.....	13
Factory certificates issued to children.....	9
Children's birth records on file.....	22
Number of written complaints of nuisances.....	74
Privy vaults.....	6
Plumbing.....	19
Other miscellaneous complaints.....	49
Total number of dead animals removed.....	963
Cases assigned to health physicians.....	60
Calls made.....	260

ABSTRACT OF VITAL STATISTICS FOR AUGUST, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption	18	15	23	19	20
Typhoid Fever	2	3	2	2	4
Scarlet Fever	0	0	0	0	0
Measles	0	0	0	0	0
Whooping-cough	1	1	2	3	0
Diphtheria and Croup	1	2	1	9	2
Grippe	0	0	0	0	0
Pneumonia	0	4	2	0	3
Broncho-pneumonia	0	1	2	3	1
Bright's Disease	15	10	15	15	14
Apoplexy	9	6	4	9	6
Cancer	7	13	10	6	9
Accidents and Violence	7	20	9	5	13
70 years and over	30	24	32	19	15
1 year and under	25	24	32	38	38
Total deaths	161	153	170	171	149
Death rate	18.94	18.00	20.00	20.12	17.53
Death rate less non-residents.	17.53	16.47	18.37	16.71	15.18

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital	7	6	12	9	10	15	6	9	9	8
Albany County Jail	0	0	0	0	1	0	0	0	0	0
Albany Orphan Asylum	0	0	1	0	0	0	0	0	0	0
County House	10	2	4	0	6	1	2	1	3	2
Homeopathic Hospital	1	0	2	1	2	1	0	1	2	1
Hospital for Incurables	0	0	0	1	0	0	0	0	0	0
House of Shelter	0	0	0	0	0	0	1	0	0	0
Little Sisters of the Poor	0	0	1	0	2	0	4	0	1	0
Public Places	1	0	0	1	1	2	1	3	3	1
St. Frances De Sayles Orphan Asylum	0	1	0	0	0	0	0	0	0	0
St. Margaret's Home	0	0	4	2	0	0	6	7	5	3
St. Peter's Hospital	7	3	6	0	4	0	0	7	3	2
Home for Aged Men	3	0	0	0	0	0	0	0	0	0
House of Good Shepherd	0	0	0	0	0	0	0	0	0	1

Births at Term..... 159

Still Births 14

Premature Births 1

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were 196 inspections made, of which 102 were old houses and 94 new houses. There were 53 iron drains laid, 54 connections to street sewers, 55 tile drains, 2 latrines, 68 cesspools, 63 wash basins, 87 sinks, 64 bath tubs, 58 wash trays, 1 trap hopper, 98 tank closets. There were 232 permits issued, of which 210 were for plumbing and 22 for building purposes. There were 36 plans submitted, of which 9 were of old buildings and 27 of new buildings. There were 2 houses tested with blue or red, and there were 39 water tests. 30 houses were examined on complaint and 16 were re-examined. 18 complaints were found to be valid and 12 without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid Fever	21	12	23	1	12
Scarlet Fever	1	3	7	3	5
Diphtheria and Croup	9	5	12	45	9
Chickenpox	0	0	0	1	0
Measles	0	2	0	3	0
Whooping-cough	1	0	0	0	0
Consumption	2	4	0	17	31
Totals	34	26	42	70	57

Contagious diseases in relation to public schools:

None Reported.

Number of days quarantine for diphtheria:

Longest..... 42 Shortest..... 8 Average.....18 5/13

Number of days quarantine for scarlet fever:

Longest..... 41 Shortest..... 23 Average.....30 2/7

Fumigations:

Houses..... 27 Rooms..... 108

Cases of diphtheria reported.....	9
Cases of diphtheria in which antitoxin was used.....	9
Cases in which antitoxin was not used.....	0
Deaths after use of antitoxin.....	2

BUREAU OF PATHOLOGY.
Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial Positive	4	4	9	35	14
Initial Negative	15	6	19	20	15
Release Positive	0	1	5	44	17
Release Negative	1	6	23	165	26
Failed	0	0	4	5	0
Totals	20	17	60	269	72

Examinations for tuberculosis:

Initial Positive .....	....	....	2	4
Initial Negative	1	....	4	7

MISCELLANEOUS.

Mercantile certificates issued to children.....	5
Factory certificates issued to children.....	6
Children's birth records on file.....	11
Number of written complaints of nuisances.....	73
Privy vaults	14
Plumbing	19
Other miscellaneous complaints.....	40
Total number of dead animals removed.....	890
Cases assigned to health physicians.....	52
Calls made	179

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

MEMORIAL MEETING

LORENZO HALE, M. D.

A special meeting of the Medical Society of the County of Albany was held Wednesday, September 2, 1908. Meeting called to order at 5.00 P. M., President Macdonald in the chair.

The following members were present: Drs. Cook, Husted, Lanahan, Lomax, Macdonald, Mereness, Morrow, Stillman, Tucker, A. Vander Veer, Van Slyke.

The President stated the purpose of the meeting was to take action on the death, August 31, of Dr. Lorenzo Hale, for a number of years, since 1871, a member of this Society, its Secretary for two years, in 1879 and in 1880, and its President in the year 1886. He said "Dr. Hale was a graduate of the Albany Medical College in the Class of

1868, and for a number of years was intimately associated with many of the institutions in our city. He was a man of fine attainments, and for him there are many who sorrow."

Dr. VANDER VEER said, "Mr. President, you have given us the prominent points in the life of Dr. Hale. He was a man who filled those various positions with great earnestness and truthfulness. Doctor Hale, as I remember him, in his early practice, was a most earnest believer in the newer remedies, and in the study of the effects of drugs I know no one among us who displayed a greater zeal. As he grew older he relied upon those methods that become our real comforts. When elected to office in the society he was an earnest worker in all that accorded with the position. He was a great believer in specialties at a time when specialties were not so generally followed as at present, although he always remained in general practice, and he believed there was a dignity in the practice of medicine. Much could be said in commendation of his character during the time that he was a practitioner, to show the esteem in which he was held."

Dr. VANDER VEER proposed the appointment of a committee to prepare a suitable memorial.

Dr. MERENESS said, "The news of the death of Dr. Hale coming so unexpectedly, has been a shock to many of us. We all recall his good qualities and we all feel his loss. No one has yet spoken of what may be called a great characteristic; he was a great biblical student; perhaps there is no one among our membership who knew so much about the Bible as he did. Quiet in his manner, always gentle, yet there was at times a jovial strain which in later years disappeared. He was a man generous and upright, and well deserving the respect of all men.

Dr. TUCKER: "My recollection of Dr. Hale goes back many years. I knew him first when, as a small boy in the Albany Academy, he was a member of the senior class, and his scholarship in this school was shown by his winning some of the prominent prizes on his graduation in 1861. I knew him next at the Albany Medical College from which he was graduating about the time I began my medical studies and I well remember how assiduously he worked under Dr. Mosher, with whom I was studying chemistry, in the chemical laboratory. His record in this Society is well known. He attended its meetings with regularity and frequently presented papers and took part in the discussion of others. For years he edited the MEDICAL ANNALS and carried it along under conditions which were often discouraging, and we are largely indebted to him for the success which this journal has attained. Dr. Hale was a man of natural ability and strength of character, gentle in manner and cordial in address. In his death we mourn the loss of an honored associate and one who has done much to advance the interests and perpetuate the long and creditable record of this society."

It was moved and seconded that a committee of five be appointed to prepare a memorial. Carried.

The President appointed Dr. Curtis chairman, because of his association with Dr. Hale for so many years, Drs. Vander Veer, Tucker, Mere-

ness and Cook. A letter from Dr. Wilfred S. Hale announcing the death of his father was received and ordered placed on file.

Dr. VANDER VEER presented the following memorial:

"It is with sincere sorrow that the word comes to us of the end save a memory of the life with us of Dr. Lorenzo Hale.

"Doubtless to the men who have come into the society life of recent years he has not been familiar, but to those of us who have had longer associations with it and have had its interests at heart, with its companionships and the co-operation in its work in various ways that go to make up the activities of this body, we are conscious of having lost one who has been a helper and a cheer.

"In varied ways we all take part in that which constitutes our common Society life. Not to do so leaves one outside of that which is the right and privilege of membership. Not all will perhaps be conspicuous in a prominent way as office bearers but wise counsel and the spirit of comradeship is a contribution which everyone may render.

"Certain of us have a special regard for Dr. Hale in having been associated with him in the initial work of the MEDICAL ANNALS. He was a member of the committee which inaugurated our serial more than twenty-five years ago, and was an invaluable helper in carrying it on during the early years of its existence. Later he took on himself the immediate responsibility of the publication. He also initiated a reading-room, using the exchanges of the magazine for this purpose and the books sent for review. It was of more value then because there was not then as now the State Medical Library; indeed it was in some degree initial to the formation of this. The College furnished a place for this reading-room and it was accessible to all the alumni. Dr. Hale was a constant worker for this enterprise and towards keeping the interest of the Society members and the alumni active. The Journal was a means towards this as well as of keeping in touch with the State Society and with other County Societies. He has deservedly been honored with the place of President of the Society and served it well in this capacity.

"He was an interesting and companionable man and his personal relations toward other members have been always pleasant. We prized his friendship and we know that we are spokesmen for all who were associated with him during the active years of his life here among us in testifying to his amiable and interesting qualities and in voicing the regret of all at his departure from among us.

"As a committee appointed to formally speak for the Society, we recommend that this memorial of our regard for Dr. Hale, expressing our appreciation of his worth, be adopted as the sense of the Society and that it be recorded upon the minutes.

"FREDERIC C. CURTIS,

"ALBERT VANDER VEER.

"WILLIS G. TUCKER,

"HENRY E. MERENESS,

"DANIEL H. COOK."

Dr. VANDER VEER said, "As an introduction to the presentation of this memorial I desire to speak of his initiative in publishing a daily edition of the MEDICAL ANNALS during two annual sessions of the State Medical Society. A short time ago, in reading the account of the proceedings of the American Medical Association when I saw the proceedings reported daily, I thought of Dr. Hale and the idea he had put in practice in the ALBANY MEDICAL ANNALS."

The memorial was adopted as the sense of the Society.

Dr. HUESTED said, "I feel that I might say a few words in tribute to the memory of Dr. Hale, not in reference to his professional ability, but as a citizen, socially and as a classmate. My acquaintance with him goes back to 1860, when we were students in the Albany Academy. He was a diligent scholar, excelling in classical studies, and capturing the classical medal at graduation. He was then upright, honorable and honest with his fellow students, always pleasant and affable. These attributes he has carried with him through life, and I cannot recall anyone speaking in a derogatory manner of him. He lived an upright, honorable and Christian life, was a good citizen and will be remembered by those who knew him for his good qualities. I am sincere in my belief that a good man has passed away.

Dr. STILLMAN spoke as follows: "I am glad to have an opportunity to express my appreciation and regard for Dr. Hale, the announcement of whose death comes as a surprise to me, as I was not aware that he was sick. I have been acquainted with him for some twenty years and always found him an honorable, upright and conscientious member of the medical profession. Dr. Hale was a student; he was a man who was accustomed to do his own thinking; he took life earnestly and seriously and endeavored to do his duty faithfully as he saw it.

I believe that Dr. Hale was a man who always had the courage of his convictions and would endeavor to the utmost to live up to them. He was genial and kindly in all his relations as far as I ever came in contact with him. I am very sorry to hear of his decease for his death will come with a sense of personal loss to many members of this Society. He had the satisfaction of leaving behind him a beautiful record of a blameless life and died, I think, without an enemy in the world, beloved by his friends and associates.

On motion of Dr. Lomax the meeting adjourned at 5.25 P. M.

JOSEPH A. LANAHAN, *Secretary*.

WILLIS G. MACDONALD, *President*.

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY MEDICAL COLLEGE.—The Introductory Lecture of the Seventy-eighth Session was delivered by Professor James P. Boyd, M. D., in the Amphitheatre of the College, on Tuesday, September 22, 1908, at 12 m.

THE ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING—STATISTICS FOR AUGUST, 1908. Number of new cases, 180; *classified as follows*: Dispensary patients receiving home care, 18; district cases reported by health physicians, 15; charity cases reported by other physicians, 65; moderate income patients, 82; old cases still under treatment, 55; total number of cases under nursing care during the month, 235. *Classification of diseases* (new cases): Medical, 54; surgical, 10; gynecological, 0; obstetrical, 60 mothers and 55 infants under professional care; eye and ear, 0; skin, 1; throat and nose, 0; contagious diseases in the medical list, 5; removed to hospital, 7; deaths, 10.

Special Obstetrical Department—Number of obstetricians in charge of cases, 4; medical students in attendance, 2; Guild nurses in attendance, 8; patients, 4; visits by head obstetrician, 1; visits by attending obstetrician, 3; visits by students, 19; visits by nurses, 29; total number of visits for this department, 52.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,275; for professional supervision of convalescents, 236; total number of visits, 1,511. Cases reported to the Guild by 3 health physicians and 41 other physicians. Graduate nurse and assistant nurses on duty, 9.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.—In connection with the Congress a series of special lectures will be delivered in Washington and elsewhere by eminent foreigners. The names of the speakers, and the cities in which they will lecture follow:

Bernard Bang of Copenhagen, Washington, October 3. Subject: "Studies in Tuberculosis in Domestic Animals and what we may learn regarding Human Tuberculosis."

A. Calmette of Lille, France, Philadelphia, September 26. Subject: "Les nouveaux procedes de diagnostic precoce de la Tuberculosis."

Emil Coni of Buenos Ayres, Washington, October 2. Subject: "La Lucha contra Tuberculosis en la Republica Argentina."

Arthur Newsholme of Brighton, Washington, September 29. Subject: "The causes which have lead to the past decline in the death rate from Tuberculosis and the light thrown by this history on Preventive action for the future."

Gotthold Pannwitz of Berlin, Philadelphia, September 24. Subject: "Social life and Tuberculosis."

R. W. Philip, Edinburg, Boston, October 6. Subject: "The Anti-tuberculosis Programme-Co-ordination of Preventive Measures."

C. H. Spronck of Utrecht, Boston, October 7.

Andres Martinez of Barcelona, New York, October 9. Subject: "Tuberculosis of the Heart, Blood, and Lymph Vessels."

Theodore Williams of London, Philadelphia, September 25. Subject: "The Evolution of the Treatment of Pulmonary Tuberculosis."

Dr. Maurice Letulle and M. Augustin Rey (joint lecture), Washington, September 30. Subject: "La Lutte Contra la tuberculose dans les grandes villes par l'Habitation; methodes scientifiques modernes pour sa Construction."

Dr. Landouzy of Paris, Baltimore, October 5.

Dr. A. A. Wladimiroff of St. Petersburg, Washington, September 28. Subject: "Biology of the Bacillus."

Prof. N. Ph. Tendeloo of Leiden. Subject: "Collateral Tuberculosis Inflammation."

TITLE OF PAPERS FOR SECTION I. DR. WILLIAM H. WELCH, *President*.

(Includes titles received up to August 13.)

Milton J. Rosenau, Washington, D. C.: "The viability of the tubercle bacillus."

Victor C. Vaughan, Ann Arbor, Mich.: "A study of the proteids of the tubercle bacillus."

John Weinzerl, Seattle, Wash.: "The action of diffuse light upon bacillus tuberculosis."

Dwight M. Lewis, New Haven, Conn.: "The morphology of the tubercle bacillus."

S. Arloing and Paul Courmont, Lyons, France: "Nouvelles Cultures Homogenes des bacilles de la Tuberculose."

J. N. Davalos and J. Cartaya, Havana, Cuba: "Comparative study of the tubercle bacillus of human and of bovine origin."

A. Rodet, Montpellier, France: "La Virulence du bacille dans ses rapports avec l'evolution clinique de la tuberculose pulmonaire."

A. Parker Hitchens, Glen Olden, Pa.: "A chamber in which dried tubercle bacilli may be handled without danger."

N. Ph. Tendeloo, Leyden, Holland: "Channels of infection."

Julius Bartel, Vienna, Austria: "Uber Eintrittspforten der Tuberkulose."

G. Kuss, Agincourt, France: "Sources et voies d'infection de la contagion tuberculeuse."

S. Bernheim, Paris: "Les portes d'entree de la tuberculose."

S. Bernheim, Paris: "Rapports de l'air avec la contagion tuberculeuse. Sterilization de l'air."

Alfred F. Hess, New York: "A study of the tuberculous contamination of New York City milk."

Jules Courmont and A. Lesieur, Lyons, France: "Inoculation transcutanee de la tuberculose."

Julius Bartel, Vienna: "Immunisirungsversuche gegen Tuberkulose."

Jules Courmont and A. Lesieur, Lyons: "Contribution a l'immunité dans la tuberculose."

A. B. Marfan, Paris: "Immunité de l'homme pour la tuberculose."

Y. Ishigami, Osaka, Japan: "Tuberculo-toxoidin and immunisation serum."

Eugene L. Opie, New York: "The part of enzymes in tuberculous lesions."

Aldred S. Warthin, Ann Arbor, Mich.: "The frequency of healed tuberculosis of the mesenteric glands, with particular reference to the relationship between hyaline deposits in these glands and the healing of tuberculous lesions."

S. Arloing, Lyons, France: "De l'infection tuberculeuse d'après le criterium anatomo-pathologique."

John McCrae, Montreal, Canada: "Analysis of 1,000 consecutive autopsies in Montreal with reference to the incidence of tuberculosis in the different organs."

A. R. Landry, Montreal, Canada: "Incidence of chronic pleurisy in 1,400 autopsies in Montreal, and its relationship to tuberculosis."

Leon Barnard, Paris: "Etude anatomique et pathologique des lesions non-folliculaires de la tuberculose."

R. Tripier, Lyons: "De la pneumonie dans le processus de la tuberculose pulmonaire."

J. Paviot, Lyons: "Processus anatomique de l'hémorrhagie dans la tuberculose au début."

Joseph Walsh and C. M. Montgomery, Philadelphia: "The kidneys in tuberculosis of the lungs."

D. J. McCarthy, Philadelphia: "Tuberculosis of the spinal meninges, with a consideration of the mode of infection of these structures."

J. T. Ullom, Philadelphia: "The liver in tuberculosis."

Walter Altschul, Prague, Austria: "Zur pathologie der Peritoneal-tuberkulose."

Charles Esmonet, Puy de Dom: "De la tuberculose experimentale du testicule."

O. Amrein, Arosa, Switzerland: "Periostitis et adipositis tuberculosa toxica multiplex."

Paul Courmont, Lyons: "Proprietes humores de exsudants tuberculeux, valeur, pronostique et therapeutique."

Camillo Calleja, Valladolid, Spain.

Alfred C. Crofton, Chicago: "An experimental and clinical study of the calcium metabolism in tuberculosis."

NEW YORK STATE EXHIBIT AT THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.—The Committee on Exhibits of the International Congress on Tuberculosis has allotted to New York State a very desirable and prominent portion of the space in the new National Museum available for exhibit purposes. The area assigned approximates 7,500 square feet. The preparation of a complete and very attractive exhibition is now being actively carried on, and New York State will have reason to feel proud of the representation it makes at Washington. The various exhibits are being assembled and transported under the direction of Commissioner Dr. Eugene H. Porter. To Dr. H. D. Pease must be given the credit for the successful conduct of the vast amount of detail involved in this work.

Among the organizations and institutions that will contribute to the exhibit are the State Department of Health, the Charity Organization Society of the City of New York, the Department of Public Charities, New York City, the State Department of Agriculture, the State Charities Aid Association, the State Commission in Lunacy, the State Prison Commission, the official and voluntary organizations for the prevention of tuberculosis of Albany, Buffalo, Brooklyn, Saranac Lake, Syracuse, Rochester, Schenectady, Troy, Utica and Rome, Adirondack Cottage Sanatorium at Trudeau, State Hospital for Incipient Tuberculosis at Raybrook, Reception Hospital at Saranac Lake, Stony Wold Sanatorium at Lake Kushaqua, St. Gabriel's Home at St. Gabriel's, Loomis Sanatorium at Liberty, Montefiore Home at Bedford, Seabreeze Hospital for Children at Far Rockaway, New York State Hospital for Crippled and Deformed Children at West Haverstraw, and numerous private institutions. In addition to the above there will be two large exhibits dealing with the relation to milk to tuberculosis. One of these will be a model of a pasteurization plant, contributed by Mr. Nathan Strauss, and the other a model depot for the production of pure milk, arranged by Dr. Alfred Meyer, chairman of the New York State Committee on the International Congress, in co-operation with the Hon. Seth Low, Dr. W. Law, Jr., Mr. V. Everett Macy, and the Hon. R. A. Pearson, State Commissioner of Agriculture. There will also be an extensive exhibit of pathological specimens showing the lesions produced by tuberculosis in various tissues of the body, contributed to by all the large hospitals and medical schools throughout the State. Various commercial apparatus used in the treatment of tuberculosis, such as sleeping bags, window tents, reclining couches, etc., will be shown, together with the apparatus used in taking radiographs of the chest for purposes of diagnosis.

SOME APHORISMS PRESENTED TO THE INTERNATIONAL CONGRESS ON PHYMATIOSIS, MEETING IN WASHINGTON, A. D. 1908.—I. The word "tuberculosis" is one of the hybrid formations of medical slang. A correct term is "phymatiosis," from phymation, a tubercle. Corruption of language is closely related to corruption of manners; corruption in medical language is corruption in medicine. The remark so often made that the old custom of using incorrect terms cannot be changed is absurd. However valuable the scientific achievements and literary contributions of medical authors may be, we are, nevertheless and indeed all the more, justly entitled to expect from these authors correctness in language, and the first essential of correctness is the use of correctly formed technical terms; 2. A foreign government has made the request for a report on the probable cause of the great mortality from phymatiosis among young men coming from Europe to the city of New York. There are three opportunities for the spreading of the disease which are not generally mentioned: the carpet nailed to the floor and stairs, the dark bedroom, and the basement as a dwelling. All these are English institutions; they are not known or at least not popular in other countries than England and America; 3. The treatment of atonia gastrica by means of the ad-

hesive plaster belt, suggested by me, is one of the most important therapeutic measures in cases of phymatosis. By this method consumptives suffering, as most of them do, from abdominal relaxation will be relieved from reflex cough and reflex vomiting, and their circulation, nutrition, metabolism, and general condition will be decidedly benefited; 4. On physiological principles and according to experience, the continuous warm bath is a means not only of ameliorating the condition in cases of phymatosis, but even of effecting a cure of the disease.

A. ROSE.

SIXTEENTH INTERNATIONAL CONGRESS.—Contributions to the Congress must be announced to the Secretary before January, 1909. It is desired by the Committee that the manuscripts should be in their possession by the 31st of January, 1909. It should be known that the time for the reading of a paper does not exceed twenty minutes and that manuscripts should be clearly written, as the correction of the proofs is attended to at the office of the General Secretary. Copies of the manuscripts will be returned by July 31st, 1909. The General Secretary is Professor Emil Grosz, M.D., the address, Budapest, VIII., Esterhazy-utca 7. Arrangements are in good progress and the preliminary program contains the names of distinguished men throughout Europe and this country. Professor Osler writes that there is much enthusiasm. Arrangements are under way for an excursion to Constantinople returning by the way of Greece.

There will be no difficulty about physical accommodations for the members.

Blank forms of application for membership to the Congress and for the presentation of papers can be had of the Chairman of the Committee.

American Committee.—Chairman, John H. Musser, M. D., Philadelphia, Pa.; The Surgeon-General of the Army, Robert M. O'Reilly, M. D., U. S. A., U. S. War Department, Washington, D. C.; The Surgeon-General of the Navy, Admiral P. J. Rixey, M. D., U. S. N., Washington, D. C.; The Surgeon-General of the Public Health and Marine Hospital Service, Walter Wyman, M. D., Washington, D. C.; H. L. Burrell, M. D., Harvard University, Boston, Mass.; Col. William M. Gorgas, M. D., U. S. A., Washington, D. C.; R. H. Fitz, M. D., Harvard University, Boston, Mass.; A. Jacobi, M. D., New York, N. Y.; William H. Welch, M. D., Baltimore, Md.; E. G. Janeway, M. D., New York, N. Y.; W. W. Keen, M. D., Philadelphia, Pa.; J. D. Bryant, M. D., New York, N. Y.; George H. Simmons, M. D., Chicago, Ill.; William J. Mayo, M. D., Rochester, Minn.; James Tyson, M. D., Philadelphia, Pa.; Hobart A. Hare, M. D., Philadelphia, Pa.; Walter James, M. D., New York, N. Y.; Charles Kolloch, M. D., Charleston, S. C.; James F. Ewing, M. D., New York, N. Y.; George Brewer, M. D., New York, N. Y.; Frank Billings, M. D., Chicago, Ill.; R. Matás, M. D., New Orleans, La.; H. A. Kelly, M. D., Baltimore, Md.; S. J. Meltzer, M. D., New York, N. Y.; Victor C. Vaughan, M. D., Ann Arbor, Mich.; E. L. Trudeau, M. D., Saranac, N. Y.; George E. de Schweinitz, M. D., Philadelphia, Pa.; W. H. Richardson, M. D., Boston, Mass.; F. F. Forcheimer, M. D., Cincinnati, Ohio; George M. Kober, M. D., Washington, D. C.; Charles G. Stockton, M. D., Buffalo, N. Y.; J. B. Murphy,

M. D., Chicago, Ill.; William E. Fischel, M. D., St. Louis, Mo.; William H. Carmalt, M. D., New Haven, Conn.; George Dock, M. D., Ann Arbor, Mich.; Arthur Bevan, M. D., Chicago, Ill.; F. W. Westbrook, M. D., St. Paul, Minn.; Charles G. Kerley, M. D., New York, N. Y.; George W. Crile, M. D., Cleveland, Ohio; Henry Sewall, M. D., Denver, Colo.; C. A. L. Reed, M. D., Cincinnati, Ohio; George Ben Johnson, M. D., Richmond, Va.; James B. Herrick, M. D., Chicago, Ill.; James E. Newcomb, M. D., New York, N. Y.; James McBride, M. D., Los Angeles, Cal.; John Munro, M. D., Boston, Mass.; L. A. Witherspoon, M. D., Nashville, Tenn.; Charles H. Frazier, M. D., Philadelphia, Pa.; Grover W. Wende, M. D., Buffalo, N. Y.; F. Fremont Smith, M. D., Washington, D. C.; Richard Mills Pearce, M. D., New York, N. Y.; J. Riddle Goffe, M. D., New York, N. Y.; H. Moffatt, M. D., San Francisco, Cal.; John F. Binnie, M. D., Kansas City, Mo.; Joseph Leidy, M. D., Philadelphia, Pa.; Samuel D. Risley, M. D., Philadelphia, Pa.; Ramon Guiteras, M. D., New York, N. Y.; A. J. McMurtry, M. D., Louisville, Ky.; A. A. Van Derveer, M. D., Albany, N. Y.

ALBANY'S TUBERCULOSIS PAVILION ERECTED BY ORGANIZED LABOR.—On Saturday, August 29, the Central Federation of Labor dedicated its tuberculosis pavilion. This is the first pavilion of its kind to be erected by organized labor in this or any other country, and it is considered by those interested in the crusade against this dread disease, as one of the most important events in the great campaign which is being waged throughout the civilized world.

RENSSELAER COUNTY HOSPITAL FOR TUBERCULOSIS.—The supervisors of Rensselaer County have appropriated \$25,000 for the erection of a hospital for the treatment of advanced cases of tuberculosis. Accommodations will be made for sixty-five patients.

PHILADELPHIA ACADEMY OF SURGERY.—The Samuel D. Gross Prize, Fifteen Hundred Dollars. Essays will be received in competition for the prize until January 1, 1910.—The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia," on or before January 1, 1910.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

PHILADELPHIA COLLEGE OF PHARMACY recently conferred the degree of Master of Pharmacy upon Mr. Samuel W. Fairchild, Treasurer of the Fairchild Bros. & Foster Co. This is the first time this degree has been given in several years.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on October 17, 1908, for the following positions: Assistant in Clinical Psychiatry, Pathological Institute, \$2,000; Civil Engineering Draughtsman, \$4 to \$5 a day; Director's Assistant, State Library, \$2,100; Examiner, State Civil Service Commission, \$1,000 (men only); Health Officer, Town of Wells, Hamilton County; Inspector of Masonry, \$3.50 to \$5 a day; Junior Statistician, \$1,200 to \$1,500; Keepers, County Jails and Penitentiaries, Erie and Monroe Counties; Keeper and Prison Guard, Sheriff's Office, New York County, \$1,000 to \$1,200; Law Librarian, State Library, \$2,500; Physician, Sixth Grade, State Hospitals and Institutions, \$900 and maintenance; Reference Assistant, State Library, \$1,200; Special Examiner, State Tax Commission, \$1,800; Special Policeman, State Normal School, Plattsburg, \$600; Structural Draughtsman, Public Service Commission, \$1,200 to \$1,800; Teacher, State Institutions (women only), \$360 to \$600 and maintenance; Veterinarian, State Departments of Agriculture and Health, \$5 to \$7 a day when employed.

The last day for filing applications for these positions is October 10th. Full information and application forms for any of these examinations can be obtained by postal card request to the Chief Examiner of the Commission at Albany.

CHARLES S. FOWLER,
Chief Examiner.

Dr. S. B. WOLBACH, BENDER LABORATORY.—The new director of the Bender Laboratory assumed charge September first, after preparation in the Lawrence Scientific School. Dr. Wolbach graduated from Harvard in 1903. Since that time he has been assistant in pathology, Boston City Hospital, assistant and instructor in pathology at Harvard, pathologist to Long Island Hospital, Boston Floating Hospital, New England Baptist Hospital, etc.

PERSONALS.—Dr. N. A. PASHAYAN (A. M. C., '01) has moved from 1104 to 785 State street, Schenectady, N. Y.

—Dr. F. I. ATWELL (A. M. C., '07) has moved from Marshall Sanatorium, Troy, to Flycreek, N. Y.

—Dr. TIFFANY LAWYER (A. M. C., '07) has opened his office at 64 Dove street, Albany.

—Dr. STANTON P. HULL (A. M. C., '08) is practicing at Petersburg, N. Y.

—Dr. RICHARD A. LAWRENCE (A. M. C., '07) is now practicing at 13 Ash Grove place, Albany.

—Dr. LEE R. DUNBAR (A. M. C., '06) is now in the U. S. Army stationed at Fort Foster.

—Dr. JOHN L. ROBINSON (A. M. C., '06) is an assistant pathologist to the Drs. Mayo, Rochester, Minn.

MARRIED.—Dr. ANDREW MACFARLANE (A. M. C., '87) and Miss Edna Ballagh, were married at the bride's home, Tokio, Japan, September 12, 1908.

—Dr. EDWIN B. WILSON (A. M. C., '05) and Miss Kathryn I. Kessy of Rutland, Vt., were married at St. Peter's Church, Rutland, September 9, 1908. Dr. Wilson is now at 49 Bergen avenue, Jamaica, N. Y.

—Dr. NORMAN C. GOODWIN (A. M. C., '07) and Miss Ethel Wheeler of Bennington, Vt., were married August 17, 1908.

—Dr. CHARLES S. ALLEN (A. M. C., '07) of Rensselaer, N. Y., and Miss Irene Williams of Fort Plain, N. Y., were married recently.

DIED.—Dr. HUGH MCG. WILSON (A. M. C., '56) a graduate of Bellevue in '70, surgeon during the Civil War; formerly of San Francisco, died in his home at Los Angeles, August 15, after a long illness, aged 65.

—Dr. CHARLES E. PARRISH (A. M. C., '80) aged 53, died at his home, Maryland, N. Y., August 15, from nephritis, after an illness of five months. He was a member of the New York State Medical Society; Coroner of Otsego County for two terms, and for ten years a member of the Board of Town Supervisors.

—Dr. JONATHAN K. HAYNES (A. M. C., '58) for many years a practitioner at Hoosick, N. Y., died at his home, August 27, aged, 84.

In Memoriam

CHARLES BENJAMIN BARBER, M. D.

The ANNALS has received delayed information of the death of Dr. Barber, and is indebted to the *Essex County Republican* for the following appreciative sketch of his life:

The not unlooked for result of the long illness occurred at twenty minutes past midnight October 30, 1907.

One of our warm patriots, one of our good citizens, one of our successful physicians, one of our kindest friends and most approachable neigh-

bors so passes from our sight; but not from the affectionate esteem of scores of friends bound to him by the ties of mutual interests and appreciation.

Dr. Barber was born in Canton, N. Y., and reached his seventieth birthday the twelfth of last June. His medical education was received at the Albany Medical College, from which he graduated in 1866, and he opened his first practice in Bloomingdale, Essex County.

He moved to Keeseville in the fall of 1876 and has since then carried comfort and relief to large numbers of the sick and suffering of this village and vicinity, until his own breaking health a few years ago greatly curtailed his ability to respond to calls, and gradually he was compelled to give up his practice entirely. He served the cause of the Union in the 60th New York Volunteers for about four years and saw the service of surgeon on the field.

Dr. Barber was twice married. His first wife was Mary Wilson and to them three children were born, Halsey, now of Concordia, Kan., Kate (Mrs. P. Barber, of New York), and Charles, now a resident of Chesterfield.

July 12, 1882, he married Mary A. Davis, of Keeseville, who survives, and whose faithful and devoted care during the years of his failing health, and especially in the last months of his suffering, has been unremitting, and has undoubtedly greatly prolonged his days.

Dr. Barber belonged to the local G. A. R. Post, of which he was chaplain. Many will remember that on last Memorial Day he was greatly exhausted after the public services, and suffered one of his heart attacks, feeling the effects for several days. He was also one of the Masonic Fraternity, and his funeral service Friday morning will be participated in by that order. He was also a member of the Congregational church and in years past has borne his share of its responsibilities. Many times he has been "supply" for a necessarily absent pastor in reading a sermon and doing his part with good will to sustain the services.

But longest and best his memory will be cherished for the spirit with which he ministered to the sick. He was undoubtedly "born" a physician—not choosing his work as a "profession," but responding to its irresistible "call." The authentic stories of his kindness would fill volumes; and if the purpose and effort to relieve pain, the many times unrewarded services of nurse as well as doctor, the discounted or remitted bills in cases of misfortune and a thousand other deeds of sympathy and kindness, count for anything, Dr. Barber knew some of the ways of One who went about doing good and will in no wise miss his reward.

LORENZO HALE, M. D.

Dr. Lorenzo Hale died at midnight August 31, 1908, in his home, 50 Clinton avenue, after an illness of six weeks with paralysis. He was sixty-four years old. His wife and daughter and son, Dr. Wilfred S. Hale, survive him.

Dr. Hale was born in Albany. He was a son of Silvester Hale, who was one of Albany's most prosperous grain merchants. He received his preliminary education in the Albany Boys' Academy and entered Yale University. He was forced to give up his studies at Yale in his third year on account of ill health, but a year later entered the Albany Medical College and in 1868 graduated. He had practiced medicine in this city about thirty years. He retired eight years ago.

Dr. Hale was a member of the Albany County Medical Society and one time its president. For several years he was the editor-in-chief of the ALBANY MEDICAL ANNALS, and associated with him in this work was Dr. Frederic C. Curtis.

EBEN SEWARD LAWRENCE, M. D.

Dr. Eben Seward Lawrence of Ballston died September 11, 1908. He was graduated from Union College in 1876. He received his degree from the Albany Medical College in 1881. He was a prominent Republican. He was fifty-four years old, and is survived by several relatives, residents of Saratoga.

CHARLES E. PARISH, M. D.

Dr. Charles E. Parish was born in Davenport, N. Y. in 1854 and died at his home in Maryland, N. Y., August 15, 1908, after five months of sickness with organic disease of the heart and Bright's disease.

He graduated from the Albany Medical College in 1879 and soon after located at Maryland where he practiced his chosen profession for about thirty years. Dr. Parish was an enthusiast, and that, with his native ability and acquired skill, made him a very successful practitioner of medicine and surgery. The doctor was generous and kind to the poor as well as to the rich and whether or not there was any probability of his fee forthcoming, no call for his services was made in vain.

He was coroner of Otsego County two terms and was on the board of pension examiners at the time of his death. He was also president of the Otsego County Medical Society. With all the arduous duties of a physician, he was prominent in politics, being an ardent Democrat. He was supervisor of his town ten years; his last term had not expired.

Dr. Parish was twice married. His last wife, Emilie Van Zandt, survives him. He is also survived by four children by his first wife, Dr. Edward J. Parish, Oneonta, and three daughters, all of whom are trained nurses. The two oldest married physicians; Della, Dr. Luther Emerick, Saugerties; Jennette, Dr. Arthur Hebb, Baltimore, Md. Miss Blanche is connected with the Albany City Hospital.

H. W. BOORN.

ALBANY MEDICAL ANNALS

Original Communications

ADDRESS

*Delivered before the Graduating Class of the Training School for Nurses of
the Women's and Children's Hospital, Syracuse, N. Y.,
May 30, 1908.*

By HENRY L. K. SHAW, M. D.,

Albany.

It was with some hesitancy that I accepted the invitation to give the graduating address this evening. I felt you were entitled to better treatment at the hands of your hospital staff and while I question the wisdom of their choice, I feel and appreciate the honor of this occasion. As a physician I take pleasure in congratulating the members of the graduating class of the Women's and Children's Hospital on the completion of their course of training.

Medicine and nursing have and always will be, closely allied. In the parable of the Good Samaritan you recall how the Levite or lawyer and the priest studiously avoided the sick wounded man, while the Good Samaritan, who was then, as now, a physician, bound up his wounds, took him to an Inn—it may have been a hospital—and provided a nurse.

The Jewish race had a wonderful insight into the value of sanitation and preventive medicine. The laws ascribed to Moses are not excelled by the most sanitary code of to-day. Jewish societies were founded with the sole purpose of visiting and caring for the sick long before the advent of Christ. In the early Christian church, some of the women workers were especially concerned with visiting and nursing the sick. St. Paul speaks of the deaconesses whose chief duties were the care of the poor and the sick. They ranked with the clergy and were ordained by the bishop. Phebe was perhaps the first deaconess and was a friend of Paul. He testifies to her ability as a nurse

in that "She hath a succourer of many and of myself also." She is credited with having started the work of the deaconesses in Rome when she made her visit there taking with her the letter from Paul to his friends.

Until recently most of the women who devoted their lives to this work, took upon themselves solemn religious vows and belonged to certain orders. The daily self sacrifice of these women, the extent of which will never be known, constitutes a bright spot in the dark ignorance and superstition of medieval medicine.

Systematic nursing, outside of distinctively religious nursing orders, dates back to Johannes Gossner of Berlin, who founded a "Woman's Society for Nursing the Sick" in 1833. This society sent previously instructed or trained nurses into homes not only in Berlin, but at a distance. He disliked the title "deaconess" and employed the term "pflegerin" or nurse, which is now in general use.

To Theodor Fliedner, however, is the credit given of popularizing nursing as a career and profession. Florence Nightingale herself made a pilgrimage to Kaiserwerth and spent some time in the Fliedner School and familiarized herself with their methods and manner of treating the sick.

It is a fact not widely known that Dr. Valentine Seaman, one of the medical staff of the New York Hospital instituted the first system of instruction to nurses on this continent. He organized a course of teaching in 1798 and gave a series of twenty-four lectures including outlines of anatomy, physiology and the care of children.

Nursing has attained the position of a practical scientific profession only in recent years. An important law in biology is that the excessive growth of any organism leads to its division. So in nursing. As the course of training lengthens and new opportunities for usefulness are presented, a tendency arises to specialize even in nursing. The name of your hospital suggests this thought and to-night I wish to discuss very superficially the important period of childhood.

John Fiske has shown that of all animals, man has the longest period of infancy. This is true not only as to the actual time involved, but proportionately to the natural duration of life. This period of plasticity is the factor which has permitted man to rise so far superior to the other animals. The life of

the codfish is a simple one. It is chiefly concerned with securing food and avoiding danger. It has little to learn from experience and requires no education. It has no infancy. The young puppy is quite helpless at birth, but his infancy is short and he soon crystalizes into an adult dog. From a study of comparative biology, it is noted that the higher the intelligence of the adult animal and the more complex its life activities, the longer is its infancy or period of development. Fiske was right when he said that "it is babyhood that has made man what he is" and "out of the helplessness of the infant comes the helpfulness of man."

The keynote of this period is development. One third the life of the individual who completes his three score years and ten is devoted to his development. In the first year he increases three times his birth weight. The brain and nervous system are only imperfectly formed at the time of birth. Scientists have conclusively shown that most of the child's earliest and many of his later movements are purely reflex and not necessarily dependant upon the higher centers. This unripe condition of the nervous system is peculiarly sensitive to both internal and external influences. Children should not be looked upon as adults in miniature. They are distinctly and decidedly different and every nurse and physician should bear this fact constantly in mind.

The early training and influences should be adapted for his unripe condition for they cannot be similar to that of the adult. For the same reasons, disease, although induced by the same cause, will follow a different course. There are a number of diseases occurring only in young children. Escherich has devised a division of the several periods of childhood which is based on certain distinctive physiologic and pathologic peculiarities of each period.

Never in the history of the world, certainly not in modern times, has so much intelligent and earnest effort been directed to the care and welfare of children as to-day. This has become a great national problem in several European countries for the birth rate is rapidly diminishing and the infantile death rate is enormous. The study of mortality records in our own State shows what strides are being made to prevent the unnecessary slaughter of our babies. The number of deaths in New York City per 100,000 of population has fallen from 1,160 to 620 in

the last decade. In Rochester it has fallen from 584 to 340 and in Yonkers from 880 to 660.

A calculation based on the present population shows an annual saving of the lives of 12,000 children under five years of age in New York City alone.

These striking results are due to many influences, but chiefly to an intelligent appreciation of the value of hygiene and preventive medicine in early childhood. The establishment of hospitals devoted to the special needs of children where nurses and physicians can receive practical training and instruction has had an important bearing in bringing about this result. The technical difficulties in the nursing of sick children have been demonstrated and overcome during your course of training and this is not the place to enter into a discussion of how to nurse sick children or how to modify milk for infants' use.

One point which cannot be emphasized too strongly or too often is the value of maternal nursing to the child. Statistics show that out of every 100 bottle fed babies, about 50 die during the first year and of every 100 breast fed babies, only about seven. Further than this there are many more gastrointestinal diseases among the remaining fifty than are to be found among the ninety-three breast fed infants.

In several cities of France and Germany the municipality pays a premium to poor mothers as long as they stay at home and suckle their babies.

The nurse has an important duty in this regard. Not infrequently it is solely on her advice that a baby is deprived of its rightful and natural heritage. The mother will often accept the nurse's judgment in this matter without consulting the physician and the nurse should realize her responsibility. I have seen many babies the victims of nutritive and digestive diseases resulting in some instances in death, due to the mistaken judgment of the nurse or physician.

The nurse should assist the physician not only in the sick room but in his efforts to educate the public. Preventive medicine is the highest branch of our science. How much better it is to prevent disease than simply to cure it! The reply attributed to Dr. Osler when a woman sought his sympathy because Providence had taken away her baby, that "It was not Providence, it was dirty milk," has deep significance. Perhaps the chief factor in the reduction of infant mortality is that of

clean milk. Dr. Abraham Jacobi, whose wisdom we all admire, recently stated that in his opinion the greatest advance in artificial infant feeding during recent years, is the providing of pure milk.

The Departments of Agriculture at Washington and Albany are very active in efforts to raise the standard of milk throughout this country and state. They send bulletins broadcast to the farmers in an effort to educate them. This is slow work and credit is due to the medical profession in obtaining more definite results. A physician in Newark, twenty-one years ago found himself confronted with the task of feeding his own son. The responsibilities of foster fatherhood weighing heavily, he began a search for a pure milk supply. Discouraged and baffled in his attempt he interested the New Jersey Medical Society in this work. After two years the Committee appointed to study this question discontinued their efforts as the task seemed well nigh impossible. The State Dairy Commissioner wrote that "such a radical reform may not be accomplished in our generation." This aroused mighty indignation in the heart of Dr. Coit and he formulated and put into effect the Essex County Medical Milk Commission. They, in brief, secured an intelligent dairyman whose dairy, cows, and methods were sanitary. As the number of bacteria are an index to the cleanliness employed, a bacteriologic standard was set. Milk coming up to all the requirements of this committee of physicians received their approval and was stamped as certified by the Milk Commission. This was the first certified milk and the same plan has been adopted by twenty-seven medical societies in twenty-seven different cities in this country. The Onondaga Medical Society followed this plan three years ago and through the efforts of its Milk Commission you are able to obtain certified milk in Syracuse.

The nurse enters into the home life of the patient more intimately than does the physician and she should strongly urge that all milk used for the sick room and for the children should come from a dairy known to be clean and sanitary. If the people insist on pure milk, it can be obtained.

A hopeful sign of the times is the rapidity with which Infants' Milk Depots are being established in this country. These so conclusively proved a practical solution of the summer infantile mortality problem in France that now over 100 such depots are

supported by municipalities in a large number of cities. Last year in the United States there were twenty-one cities in which such milk stations were in operation. In nearly every instance these are supported by private philanthropy. These depots have passed the experimental stage and should not be dependent upon the uncertainty of private charity.

John Spargo says in a recent work that "it is possible to save tens of thousands of baby lives each year in the United States alone, through the establishment of infants' milk depots conducted upon scientific principles. Private philanthropy has shown the way. Is there civic enterprise to follow?"

The object of these depots is broader than the name implies. They are not solely to provide pure milk, but to teach the mothers how to care for their babies, both in summer and winter, how to feed them properly and then provide them the food they ought to have.

They should be under medical supervision, but the most important work is that of the nurse who superintends the actual preparation of the bottles and who goes into the homes and sees that the directions are carried out.

In the warfare against tuberculosis, the nurse is in the thickest of the fight and has the hardest work. She is responsible for the hygienic care of the sick and for the instruction and protection of the family. The visiting nurse and home treatment go hand in hand. She must preach and put into practice the gospel of fresh air and hygienic living.

A word in closing more particularly to the graduating class. You have done good work during these few years of training and this community has the right to expect much from you. The cheerful, intelligent care of the sick, the relief of suffering and distress and the improvement of social conditions open the way for a life of useful service. It has been said that people may be divided into three classes: Those who give little and ask for little, those who give little and ask for much, and those who give much and ask for little. This is especially applicable to nurses. The choice in which of these divisions you are to be classed is left to your own conscience. May I offer for your life and daily inspiration the words of St. Paul: "We then that are strong ought to bear the burdens of the weak and not to please ourselves."

THE PARATHYROID GLANDS.

Read before the Medical Society of the County of Rensselaer, March, 1908.

By WILLIAM KIRK, M. D.,

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In the year 1880 Sandström discovered two little organs existing in man and in many mammals. These two organs lying in the neighborhood (more or less limited) of the thyroid gland are epithelial in structure and according to their special histological structure he considered them an embryologic thyroid residue designating them "glands parathyroidienne." (*Canstatt Year-book of General Medicine*, 1880, Volume I, Section 2.)

Sandström found in the cat and dog, oxen, horse and man in the thyroid a hemp-seed sized gland. In the last (*i. e.* man), the picture showed variety in position, shape, size and color but was constantly present. In five cases there was only one gland on each side. In two cases, he found two upon each side. Its position is constant in being in or near the thyroid gland, on the posterior region of the lateral lobes. Often one finds it near the thyroid artery. Still it sometimes lies nearer the outer side and below and sometimes underneath the trachea or in the enveloping fat of the trachea. With the thyroid gland the glandules are commonly found within the interlacing network. Many times they lie in the small easily found lumps of fat, which are joined to the thyroid by a small connecting stem. They show variation in size and form. The size varies from three to fifteen millimeters, having an average measurement of six millimeters in diameter. The form is flattened on section showing a thickness of two millimeters. The color is commonly brownish red, generally shading into yellow, though it often appears dark from the enveloping fat. The glands can be best approached from the back of the thyroid. Fat masses between the oesophagus and thyroid must be carefully examined because in the different fat lobules the glands are often found. By transmitted light they give a dark outline. They often lie under the fat upon the capsule of the thyroid gland. Lymph glands and the uncommon accessory thyroid glands are to be differentiated from them. They often show pigmentation. The vessels spring from the inferior artery.

Histologically Sandström found the "glandulae parathyroideae" to conform with three main types:

- (1) A continuous mass of epithelial cells penetrated by a somewhat dense capillary network;
- (2) A continuous cellular reticulum, the meshes of which were occupied by blood vessels and connective tissues;
- (3) Numerous small follicles in a connective tissue stroma. In this last structure there were frequently seen small masses of a substance, whose microchemical reactions resembled those of thyroidal colloid.

Baber,¹ an Englishman, shares the honor of this discovery, for his "undeveloped portions" of the thyroid correspond to the parathyroid of Sandström. He considered them to be of embryonic residual nature with a potential of development. Virchow² described, as occurring with frequency on either side of the lateral thyroid lobes, small rounded bodies about the size of a pea united to the thyroid by loose connective tissue and appearing to be small lymph glands or detached portions of thyroid tissue. Accessory thyroid glands were also described by Gruber, Verneil, Callendar, Bruch, Porta, Simon, Pagee, Krönlein, Poland, Kadyi, Zuckerhandl, Madelung, Wolfler, Wagner, Fuhr, Carle, Pianna, Ewald, Autokratow, Gibson, and many others, all of whom seem to have overlooked parathyroid glands. Kraus³ was the first author to take advantage of this discovery of Sandström for he mentioned the parathyroids in his treatise on human anatomy in 1881 and in the second edition of his *Anatomy of the Rabbit*, published in 1884. Victor Horsley,⁴ in the Brown Lectures on Pathology, maintained that the tissue of the thyroid regarded as embryonic could be demonstrated separately and distinctly encapsulated in a single mass. That this ever developed into acini had not been demonstrated.

In 1884 Rogowitch⁵ very cursorily described "restes embryonnaires" in the thyroid glands of very young animals and of adults quoting the internal parathyroids of the dog. He said they were sharply defined from the rest of the glands and in their structure corresponded to different stages of thyroid development, a statement which is not accurate. He also makes a doubtful hypothesis, (*i. e.*) that their development into true colloid follicles occurs after birth. (This reference was in Gley's⁶ Note in 1891).

Greenfield⁷ in the Bradshaw Lecture in 1893 on *Some Diseases*

of the Thyroid, refers to some glandular spaces in the normal structure of the thyroid, probably referring to integral parts of the thyroid, and not to parathyroid tissue.

In the same year Christiani⁸ investigated the lesser rodents, including the rat, the field mouse, and the common mouse. On each side he found the external parathyroid similar to those in the rabbit. In the rat the relation to the thyroid was most intimate, the parathyroid being enclosed in the thyroid though never continuous with it. In the common mouse the connection was less intimate, the parathyroid projecting above the surface of the thyroid and often detached from it. In the field mouse the separation was still more marked, the one parathyroid being frequently separated from the thyroid. They were regarded as embryonic remains.

Hurthle and Zielinska⁹ in 1894 regarded the masses as embryonic tissue in the thyroid. Describing sometimes the thyroid and sometimes the parathyroid as being external, they believe that as embryonic rests, when necessary, they develop fresh thyroid follicles.

Kohn¹⁰ in 1895 in an elaborate study of the parathyroid in the cat and other animals was the first to make any advance on Sandström's anatomical work. His contribution consisted in the fact of the discovery that there were two parathyroids on each side in the dog, cat and rabbit. He first disputed the statement that the parathyroid glands were embryonic residue, as almost coincidentally, had been maintained by Prenant¹¹ in 1894. He maintained that they were distinct. Kohn maintained that the parathyroid glands were properly called the external epithelial corpuscles of the thyroid, were present in the animals examined by him, including the mouse, rat, guinea pig, and in man. Its position was variable, with the exception of two small areas in two cats examined, there never was any continuity of structure. There were three types according to the arrangement of epithelial cells. (1) a dense continuous mass of cells with no indication of a network; (2) a continuous reticulum of cellular trabeculae, sometimes slender, at other times broader; (3) definite lobule formation, each lobule consisting of delicate cellular trabeculae which anastomosed. He does not seem to have met the type which is common of one in which the epithelium forms distinct acini, with a central lumen, often occupied by colloid material. He denied the existence of colloid substance in the

parathyroid. The "internal epithelial corpuscle of the thyroid" was found only in the rabbit, dog and cat. It differs in these particulars from the external parathyroid: (1) not only is it situated on the internal surface of the lateral lobe but it is, as a rule, covered by thyroid tissue, so that it is not visible from the surface and is therefore difficult to find except in serial sections. (2) It regularly enters into combination with the thyroid and with the tissue of the thymus lobule corresponding, whereas a union of the external parathyroid is quite exceptional.

Kohn¹² in 1896 in a second paper upon the parathyroid especially of the rabbit was further convinced of the value of his theory of the constance occurrence of parathyroid external and internal. He found that in very young rabbits, the external parathyroid is usually situated higher than the same gland as found in the full-grown animals. From a position as high as the oral pole of the thyroid it descends with age until it reaches a position as low as the situation below the thyroid. Schaper¹³ shortly after the appearance of Kohn's earlier paper from a study of the structures he found in the region of the carotid bifurcation in the calf, sheep and in five cases in man, concluded at variance with Sandström and Kohn as follows: (1) that the parathyroids are found nearer the carotid bifurcation than the thyroid and that their number is indeterminate. Positive evidence is more reliable than negative and his findings may be explained by the fact that he examined young animals and too few cases. Kohn demonstrated that in young animals the parathyroid is situated at a higher level than in the adults. (2) He maintained that the parathyroid were embryonic remains and that he had observed their development to actively functional thyroid tissue. Such a conclusion is unwarranted by the embryonic or by the adult structure of the parathyroid.

Schmidt¹⁴ in 1896 in his studies refers to the external and internal embryonic residue of the thyroid. He contrasts the continuous cellular network found in the parathyroid of the cat with that found in the dog in which he found clusters of cells concentrically disposed around a small lumen or a globule of colloid material. He concluded that the parathyroid of the dog represented a stage of development of the embryonic tissue higher than that of the cat an inference rather hard to establish.

Nicolas¹⁵ is quoted by Shaper as having observed in the

Cheroptera two nodules on each side of the thyroid. Presumably these were the parathyroids.

L. R. Muller¹⁶ in 1896 examined the thyroid and adjacent glands in twenty-two cases in man and also in the cat and dog. His results in the main agree with those of Kohn, but he stated that he was not in a position to estimate the frequency of their occurrence in man for they are frequently overlooked. He noted the occurrence of colloid in the human parathyroid; and also in the cat.

EXPERIMENTAL SECTION.

Striking differences occur between animals even in the same species as regards extirpation of the thyroid and these have been classified by Horsley¹⁷ in the following scheme—Class 1. Animals which show no symptoms after thyroidectomy: (a) Aves, e. g. chickens, and pigeons; (b) Rodentia,—rabbits. Class 2. Animals which show a slow cachexia, which may terminate fatally: Ungalata, e. g. sheep, goat, donkey, pig. Class 3. Animals which show a marked chronic cachexia, invariably fatal: Anthropoidea, e. g. man and monkey. Class 4. Animals which show acute symptoms with rapidly fatal results: Carnivora, e. g. dog, cat and fox. Flesh eating animals suffer most acutely, vegetable eaters least and omnivera occupy an intermediate place. Breisacher¹⁸ showed that animals fed on fresh meat suffered more acutely from thyroidectomy than those fed on milk or boiled meat. Gley in 1891 and in papers published in 1892, and in 1893 offered another explanation *i. e.*, that the result depended on the operation performed. He pointed out that in the rabbit the external parathyroid was separate from the thyroid and about one-half centimetre below it; whilst in the dog the parathyroid corresponding was incorporated with the thyroid, therefore parathyroid was removed with the thyroid in the dog. Gley was ignorant of the internal parathyroid as it was at that time unknown.

(1) Out of 16 rabbits in which he removed the thyroid and parathyroid only, two survived beyond a week being accidentally killed. The symptoms usually began within twenty-four hours and were very acutely fatal. In dogs it was rare to meet any symptoms until the end of the second day. But the symptoms were analogous to those observed in the rabbit previously. In a series of fifty-five rabbits up to the end of 1893 only twelve

had survived and this was probably due to leaving behind part of the internal parathyroid with the thyroid. Gley concluded that to remove the thyroid and parathyroid was as fatal in the rabbit as in the dog.

(2) He also showed that it was possible to remove the thyroid in the dog and leave the external parathyroids intact. Removal of the thyroids and subsequently the parathyroids resulted in the usual rapidly fatal termination. His conclusion in considering the removal of the thyroid alone, innocuous in the dog as well as in the rabbit was erroneous as he did not know of the internal parathyroid. And he only showed that removal of the external parathyroids alone was as harmless in the dog as in the rabbit.

(3) Extirpation of the external parathyroids alone was productive of no result.

(4) Internal parathyroidectomy with thyroidectomy followed a month later, by removal of the external parathyroids resulted in death with acute symptoms, whilst it was found that the parathyroids had undergone a compensatory hypertrophy.

One of the first to contradict Gley's report was Moussu¹⁸ who in 1892 and 1893 claimed to have removed thyroid and parathyroids with only four deaths. Hofmeister¹⁹ removed the parathyroids in very young rabbits and found delayed development especially in the osseous system. He concluded that the parathyroid tissue left behind was not sufficient to nourish the animal in response to the loss of the thyroid. Christiani²⁰ in 1893 showed that complete thyroidectomy was fatal in the rat.

Gley and Nicolas²¹ in 1895 studied the changes in the parathyroid external after removal of the thyroid in the rabbit and found (1) in fifteen days enlargement in the parathyroids. (2) that this was accompanied by a change in staining reaction in the epithelial cells and in two cases by mitotic figures in them, but (3) that after three to twelve months there was no tendency to thyroid structure.

The following confirmed Gley's earlier results:

Verstraetin and Vanderlinden²² found that after removal of the thyroid the external parathyroids left showed at first vascular engorgement and later increase in size. The supporting connecting tissue was increased while the columns of epithelial cells became enlarged, not by a proliferation of their elements but by a "true hypertrophy" of the individual cells. The condition

they describe is more consistent with an inflammation than a hypertrophy.

Cadeac and Guinard²³ in 1894 merely state that they found "thyroidectomy complete" is as fatal to dogs as to rabbits.

Palidino and Capobianco²⁴ give a like result but say that none of the rabbits—thirty—ever had a convulsion only fibrillary contractions and spasms (localized).

Edmunds²⁵ in 1895 communicated to the Physiological Society his experimental work on the parathyroid glands. He found that after removal of the thyroid and parathyroid the animals died: (2) after removal of the thyroid leaving the parathyroid (external), many rabbits died in a condition resembling myxoedema; (3) removing only the external parathyroid produced no result; his experiments use the term parathyroid applying only to the external parathyroids.

Edmunds concluded from his work upon the pathology of Graves disease in 1898:

1. The typical change found in the enlarged thyroid is of the nature of a compensatory hypertrophy.
2. The parathyroids of the dog have as much or more to do with saving them from acute myxoedema as the thyroid.
3. Though the extract from the thyroid of sheep may keep off and relieve the symptoms in thyroid-less monkeys it will not as a rule save their lives.
4. A parathyroid will not by process of compensating hypertrophy, develop into thyroid tissue proper.
5. The fact that no poison has yet been found in the blood nor in the spleen in experimental athyroidea argues against the secretory theory.

Rouxau²⁶ from results obtained by extirpation of the parathyroid separately in the rabbit concluded:

1. That the results of extirpation separately of the parathyroids are infinitely more serious than the thyroidectomy (properly so called) in the rabbit, which is absolutely harmless.
2. It is possible that the separate removal accounts for the characteristics so typical of the symptoms observed following complete removal of the thyroids with parathyroidectomy—but he does not deny that this last operation may be more serious and followed by more serious symptoms.

3. It remains perfectly established in his mind that on the other side separate extirpation of the thyroid body leads to a quite notable increase in weight of the individual and in the dimensions of the parathyroids which in many animals seem to be part of the thyroid lobes.

Vassale and Generali²⁷ concluded from experiments upon animals, *i. e.*, rabbits, cats and dogs, all of which died on the average upon the 5th day, having presented the following symptoms: fibrillary contractions, muscular spasms, psychical depression, rigid and tottering gait, tachycardia, rapid emaciation,—lowering of temperature—that complete parathyroidectomy was followed by the same morbid phenomena as the simultaneous removal of the thyroid and parathyroid glands.

Swale Vincent and Jolly,²⁸ by parathyroidectomy in animals were able to produce subcutaneous swellings—the striking characteristics of myxoedema in man. They affirm that the pathology of Graves' disease is more complex than mere thyroid insufficiency.

Vassale²⁹ concluded, in 1905, that pregnant animals had eclampsia, when the parathyroids were removed partially. He treated puerperal eclampsia in woman with his own preparation of parathyroid extracts with marvellous results. He affirmed that pregnancy by itself is capable of influencing unfavorably the latent parathyroid insufficiency, which is all the further reason pregnancy will have for affecting this condition if some other cause is added to it, which comes to be added by some endogenous or exogenous poison, the functional stimulus to the parathyroid already much augmented by the effect of pregnancy alone. In the series of very numerous experiments the author saw among dogs and cats having thyroids and parathyroids removed not only lactation and gestation but even reduction in temperature, chronic eczema, meat diet brought on the convulsive seizure of parathyroid insufficiency for a long time latent, "the animals having escaped death, thanks to aberrant thyroids."

Verstraert and Vanderlinden³⁰ observed that infection is a factor which can accelerate the development and augment the severity of the convulsive phenomenon of thyroid and parathyroid removal.

Vassale was not alone in treating eclampsia by parathyroid extract for recently Nicholson and Baldorfisky⁴⁷ have observed that thyroido-therapy in large doses constitutes a treatment of

great efficiency, capable of arresting the eclamptic attack even without other intervention, and the good results obtained are attributed to the internal parathyroids contained in the thyroid. Vassale had made at the Sero-therapeutic Institute of Milan an extract from the parathyroid of cows, which he called parathyroidine, and as early as 1904 treated a case of puerperal eclampsia in the clinic of Prof. Fabbri, giving 120 drops of the preparation in 24 hours in divided doses of 20 drops each. The eclamptic attack was arrested at the first dose and was not repeated, and a month and a half later she had a normal labor. Two other cases were treated by Dr. Zanfognini³¹ at Prof. Bossi's obstetric clinic at Geneva. One patient received 120 drops by the mouth in 24 hours and the other was given intramuscular injections of 180 drops in 21 hours. Relative to tolerance for the drug Vassale said that a rabbit had borne well the subcutaneous injection of Gm. 10 at one time. He cited a very interesting experiment bearing upon the thyroid function. A female dog had been operated on for partial parathyroidectomy (in general animals bear partial parathyroidectomy with no reaction or only show passing phenomena).

The theory of the thyroid ought to be replaced to-day by that of the parathyroids since it is known and as Vassale has proven the results of experimental physiopathologie of the thyroid and parathyroids demonstrate that the convulsive epileptiform phenomena and the expression of parathyroid insufficiency and not of thyroid insufficiency which manifests themselves without trace of convulsive phenomena by the syndrome of myxoedema or of experimental atrophic cretinism.

Vassale cited a very interesting experiment bearing upon the thyroid function. A female dog had been operated for partial removal of the parathyroid (in general, animals partially parathyroidectomized have either shown no reaction or only passing morbid phenomena). This dog had shown, immediately after the operation, slight and transitory symptoms of tetany, afterwards appearing normal. About 6 months after operation she was fecundated and littered two pups prematurely. After a year she became pregnant and dropped eight pups, seven of which born lively and robust and were nourished affectionately by her. The fifth day of their lactation the bitch was attacked suddenly by an onset of tetany, so violent as to threaten her life. With thyroid treatment in large doses by the mouth and subcutaneously

the morbid syndrome was marvelously lessened. Four pups were removed, leaving only three to nurse, and 5 Gm. of dry thyroid of the pig was administered but the lactation was still excessive and she was attacked by a new onset of tetany which was promptly combatted by another prompt thyroid treatment and two other pups taken away. The treatment was stopped and for a third time tetany was about to occur when its onset was combatted with strong doses of thyroid. Subsequently she nourished the pups for 14 days continuing the while to take large doses of thyroid. At the termination of lactation the thyroid treatment was stopped.

The parathyroid function is, then, not only a function indispensable to the economy, but it cannot be replaced by other glands. This dog, partially parathyroidectomized, presented slight phenomena of functional parathyroid insufficiency, but thanks to the compensatory function of the internal parathyroid remaining, it reestablished itself or remained latent, but rather than the complete compensatory function on the part of a single existing parathyroid, there was an adaptation of the organism which was disturbed suddenly when there occurred a cause which acted more or less upon the economy and was accompanied by vigorous lactation.

Here is manifested clearly the relation which exists between the tetany produced by suckling in the case of this dog and the psychoses resulting from lactation in women. Clinical observation shows us daily how the psychic personality of the woman is intimately connected to inherited tendencies of the sex. The statistics show us that about 14% of the cases of lunacy, for which the women are received in the Manicoma, have as a cause the different phases of reproductive life (pregnancy, labor, lactation).

The experiments of Vassale and Generali which establish the great specific function of the parathyroids had a further confirmation in the researches of Blumenreich and Jacoby,²⁷ Rouxneau, Gley, Doyon and Moussu, and with the experiments of the latter, Vassale's work concords perfectly, to attribute the sharp phenomena (tetanie) to the extirpation of the parathyroids, and the chronic phenomena, strumipriva cachexia, myxoedema to extirpation of the thyroid.

Christiani³² concluded from his experiments upon sheep that the convulsive phenomena manifest themselves following thyro-

parathyroidectomy. Sheep, therefore, obey the same rule and react as do other animals.

Moussu³⁴ performed fifty-five parathyroidectomies upon carnivorous animals and arrived at the following conclusions:

Experimental results warrant the admission that for the thyroid and parathyroid there exists two distinct functions; one, the thyroidien, the suppression of which leads only to some chronic trouble; the other, the parathyroidien, the suppression of which causes acute symptoms.

Christiani³⁵ found it quite possible to graft the thyroid and parathyroid successfully and ascertained that when there was parathyroid insufficiency the grafts grew well and adapted themselves to their new environment, whereas if there was not parathyropriva the grafts soon atrophied.

Forsyth³⁷ (the most recent investigation) decided that the parathyroids are not, as Sandström supposed, merely embryonic in nature. In the majority of specimens there are definite signs of cellular activity. They are portions of the main thyroid gland which have assumed functional activity but have not yet formed vesicles. Parathyroid tissue may develop into thyroid tissue. The secretion of parathyroid glands is a colloid material indistinguishable from thyroid colloid.

The parathyroids, therefore, are glands essentially thyroidal in nature, possessing no peculiar function, but engaged in the active secretion of the same substance as the thyroid.

The results of post mortem examination give a great variety of findings.

Pineles³⁸ claims an entire absence of thyroid new formation after partial thyroidectomy, while the parathyroids remained in natural state and his work was based on thirteen cases of tetany examined post mortem.

Thiernal³⁹ in three post mortems found no degenerative changes in parathyroid.

Erdheim,⁴⁰ the best known of pathological anatomists of the parathyroid, denies this because of a lack of vindication for such claims from number of epithelial bodies and the insufficiency of the histological examination and description that would allow one to know if there was any misconstruction in this structure.

Yanase⁴¹ followed under Escherich direction with rich material—89 children examined post-mortem—he met often pathologic processes, amyloid degeneration and miliary T. B., round cell

infiltration, bacterial emboli, most often in 33% of cases hemorrhages of which gives as the etiology an intra-uterin asphyxia.

Transplantation experiments now under consideration. The parathyroid are more resistant than the thyroid.

Leischmann⁴² transplanted parathyroids from the same species and afterwards removed the original parathyroids without producing tetany.

Vassale and Donaggio⁴³ experimenting upon the effect of parathyroidectomy in the spinal cord of dogs and cats were able to say: that "the poison, which accumulates in the organism of animals operated for removal of the parathyroid glands has a very energetic action and are eminently elective upon the medullary bundles." They found that the systematized medullary lesions are produced rapidly and with such intensity that at autopsy one plainly sees them with the naked eye.

Russell⁴⁴ found alterations in cells of the central nervous system after parathyroidectomy when dogs succumbed with symptoms of tetany.

1. Chromatolysis; chromophile granules near nucleus are in fine state of division, with associated alterations in positions of the nucleus.

2. Many large pyramidal cells show shrinkage and distortion in severe cases.

3. Small neuroglia cells, of which one or two are associated with pyramidal cells, may become more numerous so that each large cell is surrounded by a group of them, and hence Leischmann raised the question, can transplanted glands functionate?

Yanase found haemorrhagic lesions in the parathyroids.

Carnot and Delion,⁴⁵ case of tuberculous parathyroid associated with pulmonary tuberculosis is the only instance of the association of the diseased organs with the clinical condition.

The presence of healthy parathyroid tissue with diseased thyroids has led MacCallum and Fabyan⁴⁷ to believe in the functional independence of the two organs. The latter authors found two apparently healthy parathyroids with two cystic bodies which they took to be necessary thyroids in a core of cretinism, but we do not know whether these were parathyroids or thyroids for the latter organs have been found to contain some normal tissue.

Forsyth⁴⁶ found the thyroid the seat of increased functional activity in exophthalmic goitre and considers the thyroid as a reservoir for thyroidal colloid.

In an article on the relation of the parathyroid to calcium metabolism MacCallum and Voegtlin state that Verstraetin and Vanderlinden, Halsted and others showed the mild character of tetany after parathyroidectomy when the animal is kept on milk diet which is rich in calcium. All violent symptoms may be almost instantly cured by the intravenous injection of a salt of calcium in solution. The author used 5% solution of the acetate or lactate. The subcutaneous injection or the use by the mouth acts more slowly. The state of wellbeing lasts for 24 hours. Magnesium salts are somewhat similar in action but this is masked by the toxic anaesthetic effect of the drug. Potassium intensifies the condition.

An examination of the excreta of parathyroidectomized animals shows an increase in the calcium output. The blood of a dog parathyroidectomized shows a calcium content one-half of the normal during tetany. Apparently the parathyroids control in some way the calcium metabolism, so that upon their removal a rapid excretion possibly associated with inadequate absorption and assimilation deprives the tissues of calcium salts.

SUMMARY

The parathyroids have a function of importance in the economy. Their total removal is followed by acute symptoms, tetany and death in many animals. In man their complete removal ushers in a set of nervous symptoms of serious importance. Parathyroidienne is useful and may be more so than thyroid extract or the adrenal secretion.

The practical bearing of the anatomical relationship of these structures upon operation for removal of the thyroid gland is one of considerable moment. The parathyroid artery, a branch of the inferior thyroid artery, varies in length, according to the position of the parathyroid glandules and may attain a length of almost 1 cm. or more, when it may be more easily isolated. It is often difficult to isolate the little bodies even in careful dissection in a field limited in size and partially obscured by haemorrhage and staining of the tissues in the operative field. Hence it is easily assumed that they may be sacrificed in spite of the most careful precautions taken to ensure their safety. There may be a secondary or accessory blood supply to these small bodies—which would explain the failure of tetany to develop in certain cases of bilateral thyroidectomy.

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THE GUEST

OR

THE PERSONAL EXPERIENCES OF A PATIENT IN A HOSPITAL FOR THE INSANE.

TOLD BY HERSELF.

WITH INTRODUCTORY NOTES BY DR. EVERETT FLOOD, SUPERINTENDENT, MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER, MASS.; AND DR. A. R. MOULTON, FIRST ASSISTANT PHYSICIAN, PENNSYLVANIA HOSPITAL FOR THE INSANE, PHILADELPHIA PA.

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(Concluded from October Annals, page 824)

CHAPTER XX

Picnics were among the pleasures allowed at the hospital, for those patients who could enjoy them and were able to go. A party from ward four were going a few miles out from the city to gather May flowers, and Ruth was to be one of the number. She was glad when she awoke in the morning to find that the day promised to be beautiful, as days in May can be, and she was glad, not so much that she was going to the picnic, as that there was no reason why she must stop at home,—glad to be well again, and to feel that the sun shone and the flowers blossomed for her as well as for others. She had seen preparations made for such parties before, since she had been an inmate of the hospital, and it had made her desolation seem greater and harder to bear. She had not mourned because she could not join them, but because she did not seem to be one with the rest of humanity. Now all was changed. Her chains were broken, and she was like one born again.

The party consisted of ten patients, Miss Belle, an attendant, Dr. Field, and his friend, Dr. H. The coachman took a part

of the company in the hospital carriage, while others rode in a large wagon with Dr. Field for driver. Dr. H. made good time on a bicycle, keeping the party merry as he rode first by one carriage then the other. They reached the picnic grounds in due time, and although the flowers for which they searched were not plenty, the boquets which were gathered were evidence that Nature is not confined to one variety, even in early May. The uneven ground made traveling hard for Ruth's uncertain steps, but Miss Belle kindly assisted her, and she enjoyed every moment of the time. Out in the woods, everything was waking to fresh life and vigor, and she took part in the awakening. She could hear the budding trees, the shrubs, and evergreens, all singing joyously, "I am glad to be alive," and she felt for the time like shouting with them. Indeed, she was almost hilarious.

The lunch, consisting of sandwiches, cake, milk and coffee, was served by the doctors, who managed to secure their share while acting as waiters.

An incident occurred which caused some excitement among the patients. The road was near by and a runaway horse was seen without a driver. Fearing some one had been hurt the doctors ran to give assistance, if needed. Dr. Field soon returned, and reported that no one was injured. Dr. H. followed with a very solemn countenance. He had hoped, he said, to rescue some fair damsel and win her everlasting regard, but was disappointed, having found, "only a man." He had the sympathy of the entire party, and the hearty laugh which followed had the effect of quieting the nervous ones. On their way home, they passed through a small village, wherein the public buildings and business establishments were not conspicuous. Dr. Field hailed an urchin, who stared at the merry party in open-mouthed wonder, and asked to be directed to the State House. With quick repartee, the boy answered,—

"Keep right on, Sir, ye'll know it, when ye get there."

The party cheered, and the doctor threw a nickel to the boy, for encouragement received. The picnic was voted a success, and although Dr. H. had the largest boquet, it was decided that Mary had the most May flowers.

As the time drew near for Ruth to leave the hospital, she thought, with pity, of the sick and suffering ones that she must leave there. She tried to encourage them to make an effort to throw off the spells that bound them, trying to convince them that there

was the same chance for others, and for many of them, even more than there had been for her. Some listened in silence, while others said they were unjustly confined there, and begged her to use her influence, after she went away, to have them released. Some raved at her, and others insisted that the doctors did not try to assist them.

"They gave you medicine that cured you, and they could cure us if they chose."

In vain Ruth told them that it was not medicine that helped her, but that she had tried to do as the doctors had advised, and they would do as much for them.

One morning, Ellen was wilder than usual. She was confined by a strap fastened around her waist, to a lounge, from which she made frantic efforts to free herself. Ruth stopped beside her, as she was passing through the ward, and tried to soothe her.

"Don't do that way, Ellen. Be quiet, and the attendant will take off the belt."

The muff had been removed from Ellen's hands, that she might eat her breakfast, which remained untasted beside her. Ruth could not coax her to eat, as she had sometimes done, and she was obliged to leave her. When Ruth returned from her walk, Ellen was gone from the ward.

"She fainted, and was carried to the sick ward," was the answer that Ruth received to her inquiry. When a patient was removed to another ward, the trunk containing her clothing did not follow for several days, giving time for the return of articles from the laundry for the attendants to make a written list of contents. When Ruth saw the porters carry Ellen's trunk from the ward soon after the owner's departure, she understood what it meant. She asked Dr. Field the question outright.

"Is Ellen dead?" and then she waited to know if he would answer truly. She was not disappointed in him.

"Yes; she is, was the doctor's reply, "but I do not wish you to speak of it to the other patients, for many of them are excitable, and it would do them harm. That is the reason why the attendants are not allowed to speak of such matters to the patients. You are well enough now, so that I consider it proper to tell you."

Was Ruth wrong when she said, "Poor Ellen; I am glad she is free?"

And now the day had come for Ruth's trunk to be packed, for

her going home. Her husband and sister would come for her the next day. She went down to the kitchen in the morning, for the last time, and said "good-bye" to the friends who had been so kind to her; then she visited the green-house, and from there she went and sat awhile under "The Tree."

That afternoon, the trunk that came with her to the hospital was taken to her room. During the seven years of her stay in the hospital she had not once opened it herself. The first thing that met her eyes, when she looked inside, was a small work-box, the very one her aunt had given her when she was a young girl; there was a ribbon tie, and some collars and cuffs that she used to wear. She sat down upon the floor and took the articles out, one after another. She found a picture of her oldest boy, taken when a child and, thinking of the cruel years that had come between her dear ones and herself, she wept bitterly.

Beth paused in her work of taking Ruth's clothes from the bureau, and bending down kissed her saying,—

"If you fill your trunk with tears, where shall we put your clothes?" "Oh, she's crying because she's going away from here, I suppose," said a patient who stood in the doorway. "I don't think I shall cry when I leave this prison. Say," she continued, addressing Ruth, "shall you take that piece of carpet with you?"

"I have not thought of doing so," said Ruth, smiling in spite of her tears. "I don't intend to take anything that does not belong to me."

While the packing was going on, the other attendants upon the ward came in to see, as they said, that the work was properly done.

Miss Belle and her cousin Annie, Grace, and Beth's sister Mary, had been a long time on the ward and they were very dear to Ruth. It was not customary in the hospital to call the attendants by their given names, but Ruth had fallen into the habit of doing so.

"I suppose we ought to be glad Ruth is going home, but we shall miss her," said one.

"Who shall we go to with our troubles when she is gone?" asked another.

"Oh, girls, I may never see you again," answered Ruth, "but I shall keep a warm place in my heart for you. We have had a good many sad hours, and some pleasant ones together. I wish you could go with me."

"Why, we shall visit you," said Annie, "it will be just the place for us to spend our vacations, you will give us nice things to eat, won't you Ruth?"

"Certainly, you shall have whatever you order."

While they were talking, Dr. Field entered the ward, and in passing Ruth's door, he stopped and asked, with a smile,—

"Are you holding a reception, Ruth?"

"Yes, doctor, and I suppose it is my last one."

"You must excuse us, doctor. You know Ruth is going away," said Belle.

"Yes, I know, and it won't seem just right to see any one else in this room, will it?"

"I wish Mary could have it," said Ruth. "I know she would like it."

"Well, I will see about it," replied the doctor, "Mary has been doing well lately, and it may be a good plan."

After supper, Dr. Field and Miss Ray sat awhile with Ruth speaking words of encouragement and advice.

"Do not fret or worry, if life is not always smooth. Be careful of your health, and do not work too hard. We shall expect you to write and let us know how you are getting on, and you may rest assured, that we shall never lose our interest in you," were the doctor's words as he bade her good-night.

Ruth lay awake a long time that night. She could not realize that she was going out into the world again. As she thought of all the suffering and anguish through which she had passed, of the years in which her only prayer had been for death, she felt there was hope for everyone.

The next morning she arose early and put her room in order. She helped carry breakfast to the sitting-room for the last time. After breakfast she received a pleasant call from Dr. Hale. He congratulated her upon her recovery, and cautioned her in regard to the future. Ruth expressed her gratitude for the kindness that had been shown her, not only by him, but by other officers in the hospital.

"We are amply repaid for what we do, when a patient recovers," replied Dr. Hale. He bade Ruth good-bye, wishing her much happiness in the future.

The matron, who had oversight of all the wards in the building, was young for the position which she held, but she had a quiet dignity that won respect from all. She came to say good-

bye to Ruth, and to leave with her a token for remembrance, although Ruth could hardly forget one, who had been in the building during all her years there, and who had given her many a pleasant word.

Last of all, Ruth went with Dr. Field to say good-bye in the sitting-room.

"We will not stay long," said the doctor, "for it would not be well for you, or the others."

Some of the patients had been her companions for years, and she was going home, restored to health, while they must suffer on. Ruth did not trust herself to say more than good-bye, only to Mrs. Doane she whispered, "Do try to get well," promising to write to her, and asking her to reply.

Mrs. Griggs was loud in her lamentations, declaring that her friends were all going away, and whatever she should do, she didn't know.

Poor Katie sat in her corner struggling for breath, an object of pity that Ruth would never forget. The doctor hurried Ruth out of the room, and it was well that he did.

Ruth had a long talk with Mary. She felt that she owed much to this unfortunate girl, who had helped her in many ways.

And now Ruth's friends had come and she was ready to go. Dr. Field went with them to the door, where with hand-shakings and good wishes they said good-bye; and Ruth was no longer an inmate of the hospital.

CHAPTER XXI

"What am I, that Thou did'st save me
From the fate I desired,
And cross the lot myself didst crave
To set me higher."

That our story may more fully accomplish its mission we will pass over the seven years that followed Ruth's exit from the hospital, and with her take a retrospective glance.

They have been years of busy, active life, a complete contrast to the years that preceded them, and her heart is filled with gratitude to God, that through them all she has been blessed with health, strength and reason. If you ask,—“Did friends smooth the way for her, that she might be enabled to go on?”

I can answer truly that friends met her at every turn, and to

their kind encouragement she owes much; but when we take our places in the ranks, we have to fight battles, and there Ruth took her stand.

There are rough places in every life, which cannot be made smooth; there are sorrows and burdens for every one to bear, and Ruth was no exception. She was glad to work with and for those that she loved. The joy of again taking her place in life, out-weighed its cares and sorrows.

Three years passed away, and the time came when Will's step grew heavy and his cheeks pale. Will, who had been so glad to have a home, and so earnest in helping. The cough, which he hoped would soon leave him, grew worse, and day by day he grew weaker. The mother saw and trembled.

Who could lift this burden? Who could smooth the way? No one. With strength from God, she must bear it herself. She was thankful that she was well and able to care for him. They spent hours alone, together, when the father was at work, and Walter was in school.

Calling her to him one day, he said,—

"Mother, you know it is not my way to show my affection as some do, but I wish you always to remember, that I love you very dearly."

Precious legacy, to be treasured deep in her heart. All that love could do, was done, but it could not save him. To see him so anxious to be well, and to be so powerless to help him! She could not even take his place, as she would gladly have done, if he might be spared. No impatient words escaped his lips, but Ruth could see the sad discouraged look, which often came over his face, as the days went by, and as he grew weaker instead of stronger. Both knew what must come, but neither spoke, until at last, Will broke the silence.

"Mother," he said, "do you believe that if I had strong faith that God would answer my prayer, that He would save my life? Tell me just what you think."

"Oh, my boy, I know He is good and merciful, and He knows how much we all wish you to be well. I do not believe He withholds his mercies, because in our weakness, we lack in faith."

"Do you think He cannot do it, Mother?"

"He cannot break the laws that He has made in order to save your life or mine; but I know that He pities us and will do all that in His wisdom is right and best."

"I have thought it over a great deal, Mother, and I think you are right. Some things seem plainer to me now than they did before I was sick. Sometimes, when I feel restless and impatient, the thought of Jesus calms me. He comes walking over the troubled waters, and I remember His patience in suffering, and it helps me. 'The winds and waves obey Him.' That's what it means to me, Mother. I never felt clear about the miracles, but perhaps there is a beautiful hidden meaning to them all when our eyes are opened to see."

"It's a beautiful thought and I am sure it is as you say," his mother answered.

Did unseen messages whisper comfort to her boy? Looking at him then, the spirit land did not seem far away. The Psalm so full of comfort grew familiar on his lips, and Ruth often caught the whisper,—“I will fear no evil, for Thou art with me.”

On the first of the summer days, the summer that he had longed for, they laid him to rest. He had heard the words,—“Come forth,”—and another miracle was made plain.

Of Ruth's anguish we will not speak. What is of interest to those for whom I write, is,—

Did she bear her trouble? She did, because she willed to do so. God helps those who strive to help themselves, and so the “Everlasting Arms” were around and underneath her.

Do you say there are greater troubles than death? Even so, and some must sink beneath their burdens; but the majority of those who fill our insane asylums are not among the number. It is not, generally speaking, the heavy, sudden blows under which we sink. It is the worry and fret over petty cares and trials added to the excesses of life, that palsy the hand and weaken the brain.

Oh, my sisters, my brothers! I hear you say,—“Life is a battle.”

Are you as soldiers in good training for the fight? Are you temperate, honest, virtuous, brave and true? Are you marching cheerfully on, with a hand outstretched to help your halting brothers?

Look well to your armor, lest the enemy cause it to be said of you, as perchance, you have said of your neighbor: “His brain is giving way.”

The warfare will not cease when we lay down our arms. Our children must fill the ranks. Are they strong for the fight? Will

each succeeding generation find the battle harder, not that the enemy is stronger, but that the force to meet it is less?

Many and broad are the ways that lead to this living death, and it is not for me to say which are most traveled. Let each take thought for himself, lest the foe come unawares.

There are strong hands and willing hearts to aid you, and God is over all.

Take heart, remembering that he who ruleth himself is greater than he who taketh a city.

THE END.

ALBANY HOSPITAL.

SIXTH REPORT OF PAVILION F, DEPARTMENT FOR MENTAL DISEASES, FOR THE YEAR ENDING SEPTEMBER 30, 1908.

By J. MONTGOMERY MOSHER, M. D.,

Attending Specialist in Mental Diseases.

To the Board of Governors:

I have the honor to present the sixth report of the operations of Pavilion F, for the year ending September 30, 1908.

There remained in the Pavilion on October 1, 1907, sixteen patients—five men and eleven women. There have been admitted one hundred and thirty men and eighty-six women. The whole number of patients under treatment was, therefore, two hundred and thirty-two.

There have been discharged two hundred and seventeen patients—one hundred and thirty-one men and eighty-six women—and there remained in the Pavilion at the end of the year, four men and eleven women.

The following tables show the forms of disease and the results of treatment for the year, and since the opening of the Pavilion:

TABLE I.—SHOWING THE FORMS OF DISEASE AND THE RESULTS OF TREATMENT FOR THE YEAR ENDING SEPTEMBER 30, 1908.

FORM OF DISEASE.	Recov- ered		Im- proved		Unim- proved		Died		Remain- ing		Total		Total
	M	W	M	W	M	W	M	W	M	W	M	W	
Acute delirium.....	2	3	1	...	2	...	1	...	2	6	6	12	
Confusional insanity..	1	...	1	2	4	...	...	...	6	2	8		
Melancholia.....	1	2	3	7	7	12	1	...	2	12	23	35	
Mania.....	...	3	1	5	2	3	...	...	1	3	12	15	
Primary dementia....	1	...	1	4	2	...	...	...	1	5	4	9	
Recurrent insanity ..	...	...	2	1	1	1	...	...	1	3	3	6	
Chronic delusional in- sanity.....	...	...	...	...	3	2	...	...	1	4	2	6	
General paralysis.....	...	...	...	...	5	1	...	...	5	1	6		
Terminal dementia....	...	...	5	2	11	11	1	3	2	2	19	18	37
Imbecility and idiocy.	...	...	1	1	2	6	...	...	3	7	10		
Acute alcoholic de- lirium.....	17	2	5	...	1	...	1	...	23	2	25		
Alcoholism.....	...	...	25	1	1	...	...	...	26	1	27		
Drug addiction.....	1	1	...	1	1	...	...	...	2	2	4		
Uraemia.....	...	...	1	...	...	...	2	...	3	...	3		
Epilepsy.....	...	...	1	1	3	...	...	...	4	1	5		
Neurasthenia.....	...	...	1	...	...	...	...	1	1	2	3		
Hysteria.....	1	1	...	2	...	...	...	...	1	1	4	5	
Hypochondriasis.....	...	...	1	...	1	...	...	...	2	...	2		
Organic brain disease.	...	...	1	...	2	1	...	...	2	2	4		
Oedema of the brain.	...	...	...	...	1	1	...	...	2	...	2		
Typhoid fever.....	...	1	...	...	...	...	...	...	...	1	1		
Fracture of skull.....	...	...	...	...	...	...	1	...	1	...	1		
Septicemia.....	...	...	...	...	...	...	...	1	...	1	1		
No diagnosis.....	...	...	...	...	...	...	...	...	1	3	4		
Totals.....	24	13	48	25	49	40	9	5	4	11	135	97	232

TABLE II.—SHOWING THE FORMS OF DISEASE AND THE RESULTS OF TREATMENT SINCE THE OPENING OF THE PAVILION, FEBRUARY 18, 1902.

FORM OF DISEASE.	Recovered		Improved		Unimproved		Died		Remaining		Total		Total
	M	W	M	W	M	W	M	W	M	W	M	W	
Acute delirium.....	23	26	9	11	3	6	9	9	2	44	54	98	
Confusional insanity.....	6	2	6	8	6	2	4	2	22	14	36		
Melancholia.....	18	23	25	60	29	62	1	3	2	73	150	223	
Mania.....	5	10	13	19	15	21	1	1	1	34	51	85	
Primary dementia.....	2	2	7	4	22	5	1	1	1	31	12	43	
Recurrent insanity.....			5	10	6	7			1	11	18	29	
Chronic delusional insanity.....			1	3	19	25			1	21	28	49	
General paralysis.....			2	26	1	2			30	1	31		
Terminal dementia.....			18	20	63	56	15	13	2	98	91	189	
Imbecility and idiocy.....			14	8	13	16			27	24	51		
Acute alcoholic delirium.....	141	10	23	6	3	16	2		183	18	201		
Alcoholism.....	19	5	97	8	7	2			123	15	138		
Drug addiction.....	6	4	6	5	2	3	1	2	15	14	29		
Ptomaine poisoning.....	1	2							1	2	3		
Uraemia.....			1				5		6		6		
Eclampsia.....		1	1					1	1	2	3		
Epilepsy.....			9	2	9	3			18	5	23		
Neurasthenia.....	3	18	6	2	7			1	1	24	14	38	
Hysteria.....	2	2	1	11	1				1	4	14	18	
Chorea minor.....	1	1			1	1			2	2	4		
Exophthalmic goitre.....				1						1	1		
Nervousness.....		1								1	1		
Hypochondriasis.....			8		2		1		11		11		
Organic brain disease.....			10	3	4	4	5	3	19	10	29		
Cerebral concussion.....			3						3		3		
Oedema of the brain.....					1		1	2	2		2		
Locomotor ataxia.....				2		1				3	3		
Myelitis.....								1		1	1		
Cerebro-spinal meningitis.....		1							1		1		
Meningitis.....							1		1		1		
Multiple neuritis.....							1			1	1		
Hydrophobia.....							1		1		1		
Tuberculosis.....					2	1	1		3	1	4		
Typhoid fever.....		1								1	1		
Jaundice.....								1		1	1		
Pneumonia.....							1	1	1	1	2		
Pernicious anaemia.....				1				1		2	2		
Septicemia.....								1		1	1		
Gastro-enteritis.....							1		1		1		
Fracture of skull.....							3		3		3		
Multiple fibromatosis.....								1		1	1		
Malingering.....					1					1	1		
No diagnosis.....										9	8	17	
Totals.....	228	90	277	188	237	224	69	41	4	11	824	562	1386

THE WORK OF THE YEAR.

The close of the hospital year brings the duty of an annual report. The task is not unpleasant, as the summary of work accomplished affords gratification. As routine is established and a system of performance falls into grooves, less of novelty presents for discussion, and the avoidance of repetition may offer some difficulty. The absence of aggressive facts speaks well, however, for order, and for an effective organization. It may now be felt that the period of development has passed, and the anxiety of the first few years, when the solution of an untried problem was under experiment, is not so prominent. The introduction of mental wards into the mechanism of a general hospital was an innovation, for which there was no precedent, and the delicate questions involved demanded the most cautious consideration. After six years, in which approximately fourteen hundred patients have passed through this department, the trial period may be regarded as a matter of history, and the uneventful record of the last of these years is sufficient indication of the successful solution of the problem. The late Sir Andrew Clark, in an address to students, reminded them that, as practitioners of medicine, they could do something for every patient. So the work of a hospital is not to be measured by a numerical catalogue of recoveries, but is rather to be assumed from the aid and comfort given to every patient who enters its doors. A great many patients are received into Pavilion F who remain for a few hours or a few days before transfer to another institution. They are recorded in the statistical tables as "unimproved," and at first thought might be assumed to represent failures. This is not the fact. Had this provision not been made, the short period of residence would have been spent in some improvised place of custody without the comforts of medical treatment and nursing which their condition most urgently demands. It may be regretted that more of these patients cannot remain for longer treatment, but Pavilion F assumes only a part of the obligation which the community has taken for the care of its helpless and incompetent members. The State has provided liberally for the victims of mental disease, and in its hospitals is taking steps to emphasize the importance of early treatment. In proper cases the law is to be laid aside, or, more correctly speaking, has been amended, to permit the reception

of voluntary patients. With this great step in advance, much may be accomplished, but the general hospital still has a duty to perform, for many cases may enter a general hospital, and these find all necessary for care.

A misconception of the nature of mental ailments which has wrought much evil has arisen from the almost universal belief that patients should be removed from their friends. This thought has been carried to such an extent that not infrequently the family has been discouraged from visiting, and months and years have been allowed to pass with this restriction. It is true that diseases of the mind, more than any other affliction, cannot be managed at home, but it does not necessarily follow that removal should be accomplished by severance of all the dearest relations. On the contrary, the presence of friends gives assurance and confidence which has been found of the greatest benefit to the patient. In every serious or doubtful case frequent visitation has been required, and much of the success of Pavilion F is thought to be due to this co-operation. A disordered mind cannot express itself normally, and the introduction of any additional cause of worry is revealed only by an intensification of the symptoms. In the developing case there is undoubtedly a pronounced element of apprehension as to the outcome, and any action toward active treatment or removal from home, arouses the inherent dread of lunacy and the inevitable asylum. As a consequence the patient enters the hospital with a complicating mental condition over and above the actual manifestations of disease. Pathologists would designate such a state an "artefact," that is to say, an artificial element introduced by the technique of manipulation. During the last year or two our attention has been directed to this manifestation. It has been found that the crucial test of our practice comes during the first few days after admission of the patient. Active treatment may be abundantly indicated, but the fears of the patient, thus introduced to strangers and to anticipated compulsion, demand such attention, that a plan of delay has been found advantageous. Unless exhaustion is critical and life is in danger, time is given for observation of the surroundings and for acquaintance with nurses and doctors, so that it may be understood that the hospital is a place for relief and comfort, and not an irksome and complicated system of regulations. With members of the family constantly at hand, quiet soon follows and the willing co-operation of the patient is secured.

DISCHARGES.

Of the two hundred and seventeen patients discharged, thirty-seven recovered and seventy-three were improved. The percentage of cases distinctly benefited is fifty. Since the opening of the Pavilion the percentage of cases discharged as recovered and improved has been fifty-six.

Eighty-nine patients were discharged unimproved and fourteen died. The causes of death were: exhaustion from acute delirium, two; melancholia with delirium, one; cerebral hemorrhage, one; asphyxia, one; broncho-pneumonia, one; uremia, one; organic brain disease, one; edema of the brain, one; fracture of the skull, one; septicemia, one; organic heart disease, one.

ALCOHOLISM.

In the administration of a hospital of this kind the question of the abuse of stimulants and narcotics cannot be evaded. Probably no institution which cares for helpless men and women escapes demands directly or indirectly resulting from the effects of these habits. Attempts at legislation and at the organization of asylums for inebriates have been in great measure futile. It is always difficult to determine what the degree of inebriety shall be to justify forcible intervention. In the good old colonial days, when sporting proclivities were indulged and countenanced more generally than now the same difficulties were met, and in Virginia, a "Book of Instructions" touched upon the subject in the following terse limitation: "Where ye same legges which carry a Man into a house cannot bring him out againe, it is Sufficient Sign of Drunkenness." No better definition has been offered, and inability to walk may be regarded at present as the best indication for assistance. But recuperation from drunkenness is rapid, and a matter of a few hours. There is little need for hospital treatment. Patients who seek relief from drunkenness have not been encouraged to enter Pavilion F, and, with the co-operation of the public officials, the number has not been a large one. Long indulgence, however, induces pathological states requiring medical care, and the term "Alcoholism" in the table of statistics includes such cases. Serious disorders of the nervous system involving the mental integrity demand most careful attention, and the results of treatment have been satisfactory. These patients are not "let down easy," to use the

phrase of one, by a gradually decreasing supply of milk punches, but the alcohol is discontinued at once, and energies are directed to the restoration of normal functions. The same plan has been followed in cases of delirium tremens. This condition is not a simple alcoholic intoxication, but a serious and critical disorganization due to the generation of organic poisons brought about by the effects of alcohol. These poisons are to be eliminated as rapidly as possible and the strength of the patient maintained during the operation. Rapid and satisfactory results have been attained without the use of sedative drugs, which have been avoided to escape probable increased debility following their administration.

THE CONDITION OF THE PROPERTY.

Two years ago the sum of two thousand dollars was appropriated by the Board of Supervisors of the County of Albany for repairs to the building and renewals of furniture. Some cracks in the wall had dislodged the plastering, particularly in the older construction, and this was repaired and necessary painting done. Worn carpets were replaced, and furniture as needed to complete the equipment. As a result the wards have been made attractive and are commended by visitors experienced in hospital work. There is now every appearance of comfort. We may hope that a piano will some day be presented, as expert players are frequently found among the patients, and a most acceptable means of diversion would thus be given, and a billiard table is needed for the ward for men.

INSTRUCTION OF MEDICAL STUDENTS.

The evolution of medical instruction furnishes an interesting commentary upon the requirements of the community. When the pioneers invaded the unbroken forests of this new country, and the early settlements were established, the care of the sick was entrusted to the individual most competent or most willing to undertake this duty. A trained physician was not always to be found, and many practitioners were developed from force of circumstances. One such was suspected to have been a gardener in Scotland, and in this capacity to have served a Scotch doctor. "He spent his leisure in reading his master's books on medicine, and often was called to aid him in the treatment of patients." Others were apprenticed as office boys, hostlers, clerks or compounders of drugs, and followed the precepts set

before them. As cities grew, courses of instruction in anatomy were offered, to which the rural pupils flocked for a few weeks of dissection. From these arose the medical colleges, in which lectures were given by a corps of professors. These lecture terms occupied the winter season, and were short in order that the practical work of the students with their preceptors might not be seriously interrupted. This "didactic period" of medical education prevailed until the last decade. A curriculum was elaborated and lectures in the different departments were continued over lengthened sessions for three years. Students were trained in the theories of surgery and medicine, but only incidentally saw or managed cases of disease. They were graduated from college and licensed to practice with little practical knowledge. In the last few years this has all been changed. Hospitals and laboratories have been utilized, few lectures are given, and these are accompanied by demonstrations. When Carlyle wrote that "The true university is a collection of books," he could not have had in mind the demands of education in science, for now actual experiment and observation in the laboratory and clinic are required of all first-class medical colleges.

It has been as difficult as it is important to procure clinical instruction in mental diseases. With the establishment of Pavilion F an opportunity was given for bedside study, and this has been utilized. The use of hospital patients for the instruction of students has proved beneficial, not only to the students but to the patients, whose symptoms are more carefully analyzed. Under the stimulus of the accuracy needed in demonstration and in treatment, the physician prepares himself more definitely, and the treatment is more exact. Before the organization of Pavilion F no consecutive clinical course in mental diseases was offered in this country. A hospital building for this purpose has since been added to the University of Michigan, and through the munificence of Mr. Phipps another is announced to complete the excellent plant of the Johns Hopkins University. The importance of educating physicians in this department thus promises wide recognition, although the multiplicity of subjects and the enormous field to be covered by the student in the four years' medical course, permit only a limited time to any special department. Medical students regard the subject of mental diseases as too difficult and complicated and too remote from the field of general medicine to enlist interest, and their work is more or

less apt to be perfunctory, and often limited to acquisition which may meet the exactions of the examining board. Too late does the young physician find that the most important problems in his work are so complicated by mental features as to tax seriously his resources. It is safe to say that physical diseases are always accompanied by mental changes, and though these may be often so slight as to merit no consideration, they may, on the other hand, become so intrusive and dominating as to require prompt and effective treatment. During the year cases of pneumonia, presenting such active delirium as to be unmanageable at home, have been admitted, and one patient with typhoid fever was received as a mental case. Surgical cases have also been frequently received, in whom active excitement or the apathy which not infrequently attends the severe mental strain and other incidents of an operation, demand the greatest special care.

Mental diseases have been discussed didactically in the Albany Medical College for a great many years, but there was scant opportunity for practical instruction until the opening of the mental ward in the Albany Hospital. As the time and opportunity for instruction are limited, theorizing has been avoided, and no attempt has been made to introduce any of the complicated classifications or abstruse systems with which during the last few years the literature of psychiatry has become congested.

The senior class of the medical school is divided into four sections, and on Monday afternoons two of these sections report at Pavilion F at half past two o'clock. Cases are then assigned to small groups of students, and they, with the assistance of a syllabus or outline, examine the patient. An hour later the class assembles and the report of the examination is presented. This is discussed by the class, under the guidance of the instructor, frequently in the presence of the patient, and a conclusion is reached. On two occasions, now recalled, the active argument upon delusions, participated in by the patients, had a most salutary effect upon the progress toward recovery. As the students observe the course of the disease from week to week, a more encouraging aspect of mental cases is presented, and the hopeless attitude popularly taken, is lost in faith in results. It is hoped that familiarity with the commoner manifestations of mental disorders may prove valuable so that the physician may approach cases of this class with less misgiving and in less awe of the mystery in which they are too often assumed to be enveloped.

FINANCIAL STATEMENT.

Received from public patients.....	\$1,932 00
Received from private patients.....	4,623 77
Total	<u>\$6,555 77</u>

The number of day's treatment.....	4,754
The average income for each patient per week.....	<u>\$9 65</u>

ACKNOWLEDGMENT.

The administration of this department of the hospital has demanded especial attention during the year from the Board of Governors, and this has been freely given. The numerous delicate questions arising from time to time have had careful consideration. There may be some gratification in the widespread interest created by this special pavilion, that its purposes and methods have had such general approval. In several medical societies beyond our own State the need of provision for mental cases in the early stage and under the voluntary relation has been discussed, and efforts have been made to obtain in other general hospitals, wards or buildings to be organized on these lines.

The nurses have been faithful in their duties, and to their intelligent labor must be given the praise merited by successful achievement. The appreciative expressions of patients is the surest evidence of their efficiency. Every pupil nurse is required to spend at least ten weeks of the period of training in Pavilion F, and this service is continuous. In such a short time it cannot be expected that a thorough knowledge of mental disorders may be acquired, but the readiness with which the principle of conciliatory attendance is developed speaks well for the general tone of the nursing service of the hospital. The direct responsibility for the care of the Pavilion is lodged in the head nurse. Miss Alice Klute has held this position for the last two years, and has proved loyal and competent in the discharge of her arduous duties.

Further acknowledgment is due the public officials of the city and county with whom the hospital has relations. The Department of Charities and Corrections disposes of the mental cases

seeking relief, and is frequently called upon to determine the justice of appeals for admission to Pavilion F. We are especially indebted to Commissioner W. H. Storrs for his discriminating administration and entire sympathy with the purposes of the Pavilion, in preventing the admission of undeserving applicants.

Shortly after the Pavilion was opened a book-case and books were presented to the men's ward by Dr. Henry Hun, and a similar gift was made to the women's ward by Mr. and Mrs. P. K. Dederick, Jr. These have proved most serviceable and are in constant use. Subscriptions to the *Argus*, *Munsey's Magazine*, *The Argosy*, the *Strand Magazine*, the *Ladies' Home Journal* and *Pearson's Magazine* have been continued by Mr. and Mrs. P. K. Dederick, Jr., and subscription to *McClure's Magazine* has been given by "a friend." A most acceptable addition to the library was made by a gift from Mrs. Frederick Tillinghast and Mrs. James B. Lyon, consisting of bound volumes of the *Century Magazine*, *Harper's Magazine*, *Table-Talk* and the *Review of Reviews*. Mrs. Martin F. Glynn also presented twelve books, and Mrs. Fred C. Ham, books and magazines. Miss Elizabeth Somerville presented a pillow cover.

Editorial

This physician persuaded me to start a garden, but whether from philanthropic motives or because he lives next door and keeps hens I have not yet determined. He said, if I would get out early every morning and irritate the garden with a hoe, while the cool, fresh breezes fanned my brow, it would have a benign and mellowing effect upon my liver. He also volunteered to supply me with watermelon and cucumber seed; also cuttings from his favorite flower—the night-blooming hypodermic syringa. Poor, trusting fool, I listened to his honeyed words. I raised a large crop of watermelons, cucumbers, blisters and chills and fever. The latter, especially, grew and flourished with great luxuriance. Over the cucumbers and watermelons I will draw the veil. Suffice it that it was a busy summer for my physician, and soon the mortgage hereinbefore referred to was transferred from his house to mine.

He was wont to drop in on me two or three times a day at three dollars a drop, and he would hold a caucus, or perhaps it would be better to call it a mass meeting—a blue mass meeting—and he would smoke my twenty-five-cent cigars while I would sit by with a cynical smile and a clinical thermometer on my lips.

In the fall he gave me the freedom of his graperies, but I was onto him by that time, and firmly grasping my vermiform appendix I fled from his presence.

A Few Remarks.

SIMEON FORD.



It is necessary that scientific facts should be expressed by exact terms, to convey definite meanings to all who are engaged in scientific study. The enormous advances in the last few years have developed a new language, comprehensible only to the initiated, and a raid has been made on the Greek lexicon which had severely threatened that classical document. The results might well have made such a rhetorician as Quintilian stare and gasp. That the contagion has spread beyond the medical profession is revealed by the following group of definitions. A patient in a hospital for the insane was invited to prepare a classification of cases, resulting from his observations. He was told that inasmuch as science had taken the liberty to label each case with a distinctive title, it was within fairness that a subjective opinion should also be expressed. The result may be compared with some of the classifications of "Modern Psychiatry: "

Philo-crato-mania is a form of insanity that is caused by domestic troubles, and inability to govern a household, and the opposition of opinions of husband and wife, and the contradictions of parents and children.

Progenito-thanato-mania is a form of insanity that is caused by worrying about the death of children, and the religious possibilities of dead sons or dead daughters.

Eroto-entomo-mania is caused by erotic stimulants, fly soup, fly poison, cantharides, and extracts of insects.

Polygamo-mania is the delusion about marrying more than one wife.

Gamo-botano-mania is the delusion about marriage-flowers, rosy-cheeked women and beautiful love-letters.

Guneko-klepto-mania is the delusion about stealing a lady's slippers, gems or ornaments.

Geo-klepto-mania is the delusion about stealing hidden treasures and buried articles.

Idolo-mania is the imagination about non-existing aesthetic objects.

Bovine-zoo-mania is the form of insanity characterized by symptoms of animalism caused by thinking too much of cows and bulls.

Klepto-phobia is the form of insanity in which a person imagines that a house will be robbed.

Idolo-pluto-mania is the delusion that a person has toys and images and other objects to sell to children.

Haemo-exosteo-mania is a delusion caused by drinking the blood of animals, and swallowing pulverized oyster-shells and clam-shells.

Nekro-philoto-mania is the delusion that is caused by hearing of the death of a son or a friend.

Porcine dipso-zoo-mania is the form of insanity that is caused by eating too much swine's flesh and swallowing hog-swill.

Eroto-toxico-mania is the form of insanity that is caused by erotic stimulants and narcotics and burned snakes.

Gamo-trigono-mania is the form of immorality that is caused by thinking too much of women and of triangular corners.

Chrono-grapho-mania is a delusion about the need of watches and clocks and the passing of time, and the need of signing papers that are only of imaginary importance.

Poly-crato-phobia is insane submissiveness that is caused by the contradictions of teachers and parents, relatives and bosses, and their tyrannical commands.

Pyro-phobia is insane fear of fire, and the delusion that a house will be burned.

Thanato-phobia is the insane fear that some person might die.

Tri-theo-mania is the priests' super-concentration on the Trinity, and on the relationship of God to the individual mind.

Dipso-thanato-mania is the mania that is caused by excessive alcoholism, delirium tremens, and worrying about death or about dead persons.

Guneko-thanato-mania is the mania that is caused by excessive worry about the death of a wife, or of a lady relative or lady friend, or of any other woman.

Nicoto-toxico-mania is a form of insanity caused by excessive use of tobacco and narcotics.

Tele-elektro-phrenopathy is any functional disorder of any part of the brain of a person, caused by electric currents, turned on the person from a distance.

Elektro-neurasthenia is a weakness of the nervous system, caused by turning electric currents on a person in a manner contrary to the rules of mikro-elektro-therapy.

Elektro-sodomia is the causation of orgasms by turning electric currents on the sexual organs.

Elektro-hysteria is excessive laughter, crying, or weeping, or nervous spasms, and other hysterical symptoms caused by incorrect use of electricity.

Elektro-anenergization is diminution and impairment of the physiological energies, caused by negative electric currents.

These terms may be commended to the expert for use in court.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR SEPTEMBER, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption	14	22	9	11	23
Typhoid fever	3	1	0	0	0
Scarlet fever	0	0	1	0	0
Measles	0	1	0	0	0
Diphtheria and croup	0	0	5	4	0
Whooping-cough	0	1	1	2	1
Grippe	0	0	5	0	0
Diarrheal diseases.....	9	13	5	8	12
Pneumonia	5	3	8	9	4
Broncho-pneumonia	0	2	0	3	0
Bright's disease	16	19	11	16	16
Apoplexy	9	10	5	2	7
Cancer	7	7	7	9	5
Accidents and violence	5	8	11	4	10
Seventy years and over	18	28	25	25	36
One year and under.....	19	23	20	23	26
Total deaths	123	165	135	140	144
Death rate	14.96	20.06	16.51	17.02	17.51
Death rate less non-residents	12.89	17.75	13.74	15.07	15.32

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital	6	9	11	6	5	15	9	9	8	6
Albany County Jail	0	0	0	0	0	0	1	0	0	0
Albany Orphan Asylum	0	0	0	1	0	0	1	0	0	0
County House	1	2	3	1	2	1	3	1	3	4
Homeopathic Hospital	1	1	2	1	0	2	4	0	0	4
Hospital for Incurables	0	1	2	0	0	0	0	0	1	1
Little Sisters of the Poor	0	0	7	2	3	2	3	0	1	0
Public places	1	2	0	3	0	0	1	1	0	0
St. Margaret's House	1	0	2	2	2	1	3	1	0	0
St. Peter's Hospital	2	2	3	4	4	1	4	2	4	3
Dominican Convent	2	0	1	0	0	0	0	0	0	0
Fifth Precinct	0	0	1	0	0	0	0	0	0	0

Births	111
Premature births	2
Still births	7
Marriages	15

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation there were two hundred twenty-seven inspections made, of which one hundred forty-nine were old buildings and seventy-eight new buildings. There were one hundred eight iron drains laid, eighty-one connections to street sewers, eighty-nine tile drains, one hundred thirteen cesspools, one hundred fifty-four wash basins, one hundred forty-four sinks, one hundred fifteen bath tubs, eighty-nine wash trays, one butler's sink, one hundred sixty-eight tank closets, eight slop hoppers, one shower bath. There were two hundred thirty-four permits issued, of which two hundred eleven were for plumbing and twenty-three for building purposes. There were thirty-seven plans submitted, of which thirteen were of old buildings and twenty-four of new buildings. There were fifteen houses tested, ten with blue or red and five with peppermint and there were thirty-seven water tests. Thirty-nine houses were examined on complaint and thirty-five were re-examined. Fourteen complaints were found to be valid and twenty-five without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid fever	19	18	15	11	4
Scarlet fever	1	6	7	2	9
Diphtheria and croup	9	7	20	50	10
Chickenpox	3	1	0	2	2
Measles	1	1	0	2	0
Whooping cough	2	1	3	0	0
Consumption	0	0	0	23	35
Totals	35	34	45	90	60

*Contagious diseases in relation to public schools:**Reported.*

	D.	S.	F.
Public School No. 3.....	1		
Public School No. 6.....	1		
Public School No. 8.....			1
Public School No. 10.....	1		
Public School No. 14.....	1		
Public School No. 15.....			1
Public School No. 20.....			1

Number of days quarantine for diphtheria:

Longest..... 27 Shortest..... 6 Average..... 17 4/5

Number of days quarantine for scarlet fever:

Longest..... 24 Shortest..... 16 Average..... 19 1/4

Fumigations:

Houses..... 14 Rooms..... 80

Cases of diphtheria reported..... 10

Cases of diphtheria in which antitoxin was used..... 9

Cases in which antitoxin was not used..... 1

Deaths after use of antitoxin..... 0

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial positive	4	2	4	29	9
Initial negative	19	20	16	15	15
Release positive	6	1	6	13	1
Release negative	7	8	16	67	15
Failed	0	0	7	8	6
Totals	36	31	49	132	46

Test of sputum for tuberculosis:

Initial positive	5	4
Initial negative	5	10

MISCELLANEOUS.

Mercantile certificates issued to children.....	21
Factory certificates issued to children.....	13
Children's birth records on file.....	34
Number of written complaints of nuisances.....	48
Privy vaults	6
Plumbing	17
Other miscellaneous complaints	25
Total number of dead animals removed.....	810
Cases assigned to health physicians.....	55
Calls made	165

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSES—STATISTICS FOR SEPTEMBER, 1908.—Number of new cases, 144; *classified as follows*: Dispensary patients receiving home care, 10; district cases reported by health physicians, 13; charity cases reported by other physicians, 46; moderate income patients, 75; old cases still under treatment, 37; total number of cases under nursing care during the month, 181. *Classification of diseases* (new cases): Medical, 47; surgical, 21; gynecological, none; obstetrical under professional care, mothers, 37; infants, 36; eye and ear, 1; skin, none; throat and nose, 2; contagious diseases in the medical list, 11; removed to hospital, 3; deaths, 10.

Special Obstetrical Department—Number of obstetricians in charge of cases, 1; medical students in attendance, 1; Guild nurses, in attendance, 5; patients, 3; visits by head obstetrician, none; visits by attending obstetricians, 1; visits by students, 8; visits by nurses, 20; total number of visits for this department, 29.

Visits of Guild Nurses (all departments): Number of visits with nursing treatment, 1,234; for professional supervision of convalescents, 324; total number of visits, 1,558. Cases reported to the Guild by 5 health physicians and 41 other physicians. Graduate nurses and assistant nurses on duty, 10.

Department of Dispensary Work—September, 1908. Number of clinics attended, 82; number of visits by Guild nurses, 71; number of hours spent in clinical work, 160; number of patients receiving care, 570; number of new patients for whom new history cards were made out, 114; number of patients for surgical clinics, 82; number of patients for gynecological, 21; number of patients for medical, 119; number of patients for stomach, 10; number of patients for children's, 91; number of patients for eye and ear, 139; number of patients for G. U. and skin, 65; number of patients for nose and throat, 22; number of patients for dental, 1. Besides the time spent in assisting the physicians in the various clinics, the nurses prepare and sterilize all dressings used and keep the rooms and cupboards in order.

COLUMBIA COUNTY MEDICAL SOCIETY.—At the recent annual meeting of the Columbia County Medical Society held at Hudson, on October 6th, the following named officers were elected: President, Frank C. Maxon, Jr., Chatham; Vice-President, Louis Van Hoesen, Hudson; Secretary and Treasurer, T. Floyd Woodworth, Kinderhook; Delegate to State Society, Clark Green Rossman; Alternate, James W. King, Stottville; Delegate to Third District Branch, N. D. Garnsey, Kinderhook; Alternate, George P. K. Pomeroy, Stuyvesant; Censors, Nelson H. Mesick, George P. K. Pomeroy, N. D. Garnsey, James W. King, Clark Green Rossman.

It was decided to hold the semi-annual convention of the Society in Chatham on the first Tuesday in May.

THE ANNUAL CONFERENCE OF SANITARY OFFICERS will be held in the city of Albany, December 1st, 2d and 3d. A very interesting program is being prepared, and as soon as completed will be mailed to the local health officers.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS.—The eighteenth annual meeting of the New York and New England Association of Railway Surgeons will be held at the Academy of Medicine, New York City, on November 17 and 18, 1908, under the Presidency of Dr. F. A. Stillings, of Concord, N. H.

The entire morning session of the first day will be devoted to a symposium of the following subject, "What are the Causes Leading to Railway Accidents and what Remedies Can be Suggested?"

The various features of this interesting subject will be presented by eight authors who have been selected with care and around twenty chief surgeons and claims attorneys will take part in the general discussion. Railway officials and all members of the medical profession who are interested in this work are cordially invited to attend this meeting.

THE WASHINGTON STATE MEDICAL ASSOCIATION held its annual convention at Walla Walla, during the second week in September. The following officers were elected for the coming year: President C. A. Smith, Seattle; Vice-President, Y. C. Bealock, Walla Walla; Second Vice-President, W. Kilpatrick, Bellingham; Secretary, C. H. Thompson, Seattle; Treasurer, L. L. Love, Tacoma.

CONSUMPTION IN THE FAMILY.— "My father and mother died of consumption a long time ago; my brother died last year; I have two more sick with it and I expect to die with it myself some day. It's in the family." Such was the statement made by a healthy looking girl about twenty years of age to a representative of the State Charities Aid Association at one of its exhibitions on the prevention of tuberculosis sent out to thirty-six county fairs in New York State this season. This hopeless submission to a family fetish of supposed inherited consumption is one of the greatest obstacles to overcome in the fight against this disease. When a person with "consumption in the family" is told "it isn't your family that has con-

sumption; it is your house, and you can get it out of your house and out of your family at the same time," the statement is met with almost unbelief.

It is necessary to convince such a person of the truth of this statement or that family will continue to have consumption and other families will through social intercourse become affected. There are some very striking pictures in these county fair exhibitions which emphasize this point and no doubt dozens have been convinced that the fact that someone in their family died sometime of consumption does not mean they are doomed also to die of this disease. The pictures are of a house in a city of this State in which, since 1902, five persons have died of consumption in *four different families*. This is a striking illustration of house infection accounting for deaths which usually are ascribed to "inherited" infection.

Possibly the first consumptive who died in this house was careless and therefore largely responsible for the other four deaths. A careful consumptive who eats and sleeps alone, who is particular to destroy every particle of sputum at once is not a danger to the community, but a consumptive who uses the same dishes, or glasses, towels and bedding as the rest of the family, who coughs and spits anywhere and everywhere is guilty of a dangerous carelessness. It probably is not wilful carelessness, only ignorant carelessness. It is to enlighten this ignorance and prevent this carelessness that the civilized world has arrayed itself for the fight against the White Plague. In every state in this country, there is a growing tendency toward organized and intelligent cooperation between public and private effort with the educated individual as the object of this united energy.

Along with intelligent education must go wise legislation and New York State is fortunate in the possession of laws which provide for the disinfection of homes after the death or removal of a consumptive. Where this law is enforced, the germs of disease are killed and the danger of the "family having consumption" is greatly lessened because the house no longer has consumption. It is the duty of every health officer to see that this precaution is taken and it is the right of every citizen to demand it.

PUBLIC HEALTH AND HOSPITAL EXHIBITS.—One of the chief benefits of a great exposition where the handiwork of man is shown in all its many phases, is in the educating of the masses on subjects of which the vast majority of the people are either ignorant or at the best but poorly informed. The progress of medicine and medical science, the great discoveries of the men who devote their lives to research and investigation, the value to the human race of the proper observances of the laws of sanitary science and hygiene are all matters of which the public are vitally interested and are willing to be informed when the opportunity presents itself.

The authorities of the United States government propose to do much toward educating the public, showing modern appliances and methods of treatment and illustrating the value of sanitary laws and practical hygiene at the Alaska-Yukon-Pacific Exposition which will be held in Seattle in

1909. One of the features of the exhibit of the treasury department in the government building will be that of the Public Health and the Marine Hospital Service. The exhibit will be arranged for giving the greatest amount of information in the simplest and most thorough manner. Demonstrations of great value for the laymen's knowledge will be held. In its report to the officers of the exposition the department outlines its exhibits as follows:

"The Surgical Section will consist of a model operating room, having in the center wax figures showing a surgical operation in progress. Around the side of the room will be placed steam sterilizers for dressings, water sterilizers, irrigating stands, an instrument case containing a full surgical armamentarium, glass topped bottles, glass basins, and all the other appurtenances of a fully equipped operating room.

"The Laboratory Section is to contain various apparatus constantly used in the Hygienic Laboratory in the solution of public health problems. This includes laboratory glassware, sterilizers, thermostats, embedding apparatus, microscopes, microphotographic apparatus, etc. Petri dishes containing cultures of bacteria isolated from contaminated vaccine virus will be shown. A traveling laboratory is included in this section, two such outfits being constantly held in readiness by the Service for field work or for use in the event of outbreaks of epidemic diseases in various parts of the country. In addition there is to be a very complete helminthological collection. This collection is of great value in view of the increasing attention given to parasites in relation to diseases of man. A maorograph is used to enlarge microphotographs of various pathogenic bacteria, annual parasites and other specimens related to disease.

"The Hospital Section will comprise a record room and model ward. The record room contains various Service publications, a hospital library, clinical histories with their method of filing, and filing cases for microscopic slides. The model ward is equipped with modern hospital beds, invalid chairs, bedside stands, a wheeled stretcher, litters, a portable bath tub and stretcher, medicine cases, a case of surgical dressings, etc.

"The Tuberculosis Exhibit is to consist of a model of the Marine Hospital Sanatorium located at Fort Stanton, New Mexico. This, together with views of the buildings and surrounding country are shown to emphasize the advantage of light and air in the treatment of tuberculosis.

"The Quarantine Section includes a model of a detention camp intended for use in the time of epidemic, also models of the quarantine stations at Delaware Breakwater and Reedy Island, and a model of disinfecting machinery used at the latter station.

"The X-Ray Section will be installed in a room constructed for the purpose. Two modern coils are to be shown, including X-Ray tubes and flourosopes, also a high frequency apparatus and the various accessories, which naturally form a part of such an exhibit. In addition, there are to be shown numerous photographs to illustrate the uses to which this apparatus is applied at the different hospitals of the Service."

SCHOOL FOR DEAF MUTES.—New York City has just opened the first public school for deaf mutes in America, believing that official steps should

be taken to improve the condition of hundreds of deaf mutes who are growing up as illiterates and dependents. The work is, of course, under the direction of the Board of Education, and the Board has also received from the Institution for Improving the Condition of Deaf Mutes an offer of its entire plant, building, teachers, and pupils, to be incorporated into the public school system. Established forty-four years ago, this institution has carried on in a semi-public way, a work of great value in training deaf mute children to become self-supporting. There is also a training school for teachers connected with it, which solves the difficult problem of finding persons equipped to train deaf mutes.

PERSONALS—Dr. WILLIAM A. KRIEGER (A. M. C., '06) is the attending pathologist to the Vassar Hospital, Poughkeepsie, N. Y.

—Dr. ZENAS VAN D. ORTON (A. M. C., '07) is located at Salem, N. Y.

—Dr. JOSEPH L. DONHAUSER (A. M. C., '06) of Albany recently passed examination and was appointed First Lieutenant, Medical Reserve Corps, U. S.

—Dr. WM. P. SPRATLING, formerly of the Craig Colony for Epileptics, is now at 1110 N. Charles street, Baltimore, Md.

—Dr. C. N. CALLENDER (A. M. C., '89) has removed from New Boston, Mass., to Paquinock, Conn.

ENGAGEMENT—Mr. and Mrs. Thomas Holt, of Midland, N. J., announce the engagement of their daughter, Miss ADA HOLT to Dr. JAMES N. VANDER VEER (A. M. C., '03) of Albany, N. Y.

MARRIED—Dr. HERMAN V. MYNDERSE (A. M. C., '87) of Schenectady and Miss HELEN LOUISE DOUW, of Poughkeepsie. Dr. and Mrs. Mynderse will live at Lake Hill, Scotia, N. Y.

—Dr. STILLMAN S. HAM (A. M. C., '02) and Miss MABEL K. SMITH of Schenectady, were married January 8, 1908. Dr. and Mrs. Ham reside at 947 State street, Schenectady, N. Y.

—Dr. WALTER ALLEN COWELL (A. M. C., '05) of Albany and Miss VIOLET A. PARRISH of Salem, N. Y., were married early in October. Dr. and Mrs. Cowell will live at 42 North Barry street, Olean, N. Y.

—Dr. SAMUEL O. KEMP (A. M. C., '06) and Miss JEAN M. DEUTSCH CAIN of Albany were married in Albany, October 14th. Dr. and Mrs. Kemp will live in Schaghticoke, N. Y.

DIED—Dr. JOHN C. SHILAND (A. M. C., '78), one of the most prominent physicians of Watervliet, N. Y., died September 24, 1908, after a lingering illness, aged 53.

—Dr. H. SHELDON EDSON (A. M. C., '77) died at his home in Cortland, N. Y., September 19, from pneumonia, aged 73.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The Diseases of Children. A work for the practicing physician. Edited by Dr. M. PFAUNDLER, Professor of Children's Diseases, and Director of the Children's Clinic at the University of Munich, and Dr. A. SCHLOSSMAN, Professor of Children's Diseases and Director of the Children's Clinic at the Medical Academy in Dusseldorf. English translation edited by HENRY L. K. SHAW, M. D., Albany, N. Y., Clinical Professor of Diseases of Children, Albany Medical College; Physician in charge St. Margaret's House for Infants, Albany, and LINNAEUS LA PETRA, M. D., New York, N. Y., Instructor of Diseases of Children, Columbia University; Chief of Department of Diseases of Children, Vanderbilt Clinic; Assistant Attending Physician to the Babies Hospital. With an introduction by L. EMMETT HOLT, M. D., New York, N. Y., Professor of Pediatrics, Columbia University. In four volumes. Illustrated in black and white and in colors by 61 full-page plates and 430 text cuts. Philadelphia and London. J. B. Lippincott Company.

Among the most striking features of the growth of specialism in medicine within the last few years is the development of Pediatrics. Coincident with this there has been a corresponding development in pediatric literature; journals (periodicals), text-books, monographs and encyclopedias, all devoted exclusively to this subject, have appeared from time to time. The work under review belongs to the latter class; it is, also, in its present form, the latest contribution to pediatric literature. The original German edition, of which this is a translation, appeared in the summer and fall of 1906, and is thus barely two years old. Work on the American edition was started before all volumes of the German work were out, and the present four volumes were issued in less than two years from the date of publication of the first German volume.

Besides being the newest, it is also by far the most pretentious and the best of any work on children's diseases extant. As the preface states, it is a "manual designed for the use of the practicing physician." "Planned on a broader scale and more in detail than the ordinary text-books, our work is meant to be a trustworthy book of reference, as well as interesting and instructive when read continuously."

The editors of the original German edition adopted the method of assigning each chapter to an author who had devoted himself with special success to the subject of which it treats. This method ensures that the various chapters contain the latest and best information obtainable upon the subjects in question, a court of last resort in pediatric literature. What might perhaps be considered a disadvantage in this method is the fact that some subjects, especially if closely allied, receive double attention, causing some repetition, and that somewhat different views of one and the same question have been taken. This different point of view is however no

true disadvantage, and the repetition is often helpful as each author is able to present to the reader in a concise form the particular province which he has mastered by personal investigation.

The list of authors includes representatives from almost all of the leading children's clinics in German-Europe. We notice that for the most part they are the younger and rising men who have grown up in medicine as pediatrics has developed, and perhaps are better able therefore to write on special phases of the subject.

The American editors have pursued a similar plan in the selection of the translators, using for the most part younger men in this country who are especially interested in pediatrics or in the subject matter of the chapters they were asked to translate.

Volume one contains the "general part" of the work, a consideration of various topics of interest in a broad discussion of the diseases of children. The first section is a discussion of the "General Pathogenesis and Pathology of Childhood," by Dr. FRANZ HAMBURGER of Vienna. The second section, which forms by far the largest part of the first volume, is an extended consideration of the "Symptomatology of Children's Diseases," by Prof. PFAUNDLER of Gratz. This section consists of a tabular summary of all symptoms of diseases of children classified according to the anatomical systems of the body. Certain symptoms of little value and the consideration of certain infectious diseases rarely occurring in children in this latitude are omitted. Other omissions of little practical value are also noted. The summary is accompanied by a special and complete index. This tabulated summary ought to prove of great value in some cases, but the danger lies in the use some persons may make of it as an automatic index to the diagnosis of disease. The author warns against this. Its construction forbids its use as "a key" to the diagnosis of any particular case.

Following this chapter are two most excellent ones on the "General Prophylaxis in Diseases of Children," by Dr. B. BENDIX of Berlin, and on "General Therapeutics in Diseases of Children," by Dr. H. NEUMANN of Berlin. These chapters should be read by every practitioner whether especially interested in pediatrics or not, as all must deal somewhat with children, and furthermore many of the subjects considered therein concern adult prophylaxis and therapeutics as well as juvenile.

The next chapter is an admirable one dealing with the statistical aspect of pediatrics: "Mortality and Morbidity in Infancy." It is amply illustrated by charts, tables and diagrams and for one interested in statistics and mortality records is of great interest.

A thorough discussion of "Milk" by Prof. R. M. RAUDNITZ of Prague, comprises the next chapter. Its scope is shown by the following summary of its contents. 1. Microscopical examination of milk. 2. Chemistry of milk. 3. Milking and the care of milk, including the methods of preparing modified milk and whey-milk, for the market. 4. Examination and analysis of milk (including that for adulterants and preservatives).

The next chapter is headed "The Female Breast," and is by Dr. S. ENGEL of Dresden. It includes a discussion of the composition of human milk under all circumstances, of the technique of nursing, of the hygiene

and dietetics of the nursing woman, of the choice of a wet nurse, and of the pathology of the nursing woman.

Following this is a chapter on "Metabolism and Nutrition during the First Year of Life," by Dr. W. CAMERER of Stuttgart. It is amply illustrated with tables and charts, and includes a consideration of breast feeding, weaning, mixed feeding and artificial feeding of infants. The consideration of these subjects is quite different from that usually accorded them in American text-books on infant feeding, and we notice but slight references to percentage feeding and the home modification of cow's milk. Another chapter by Dr. CAMERER follows on "Children's Growth in Weight and Height." This is an interesting statistical study well illustrated by charts and tables.

The last chapter of volume one is upon the subject of "Nutrition after the First Year," by Dr. P. SOMMERFELD of Berlin. This is very short and condensed, largely composed of tables and schedules. An instructive table found here graphically represents in colors the constituents (elemental food materials) of the more important foods employed in childhood, the analysis of sixty articles of diet being represented.

Volumes two, three and four comprise the "special part" of the work. Volume two contains in the first third, chapters upon the diseases of special periods of life as "Diseases of the Newborn," by Dr. W. KNÖPFELMACHER, Vienna. "Prematurity and Congenital Debility," by Dr. D. ROMMEL, Munich; "Diseases of Puberty," by Prof. C. SEITZ, Munich. These are followed by chapters on certain general diseases; Diseases of the Blood and Blood forming Organs, Hemorrhagic Affections, Infantile Scurvy, Rachitis, Diabetes Mellitus, Diabetes Insipidus, the last two by Prof. CARL VON NOORDEN, Vienna, and Scrofula. The last two-thirds of this volume are given over to a consideration of the acute infectious diseases, acute articular rheumatism, syphilis and tuberculosis. Among the authors of this part of the work are: Dr. P. MOSER and Dr. C. VON PIRQUET of Vienna, Prof. J. VON BÓKAY, Budapest, Dr. N. SWOBODA of Vienna, Prof. R. FISCHL of Prague, Dr. J. H. SPIEGELBERG of Munich, Dr. C. HOCHSINGER of Vienna and Prof. A. SCHLOSSMAN of Dusseldorf, the latter contributing the article on tuberculosis; all names guaranteeing the quality of the text.

Volume three contains the chapters upon diseases of the digestive tract, diseases of the respiratory system excluding tuberculosis, diseases of the circulatory system and diseases of the thyroid gland. Other allied subjects treated of in this volume are hernia in children, animal parasites, diseases of the peritoneum, the pathology of metabolism, intestinal bacteria, poisons, diseases of the thymus, status lymphaticus and sudden death in infancy. We note that the chapter upon diseases of the thymus, etc., is not mentioned in the table of contents of this volume. The chapter on animal parasites is merely a resumé of the subject, but contains probably all that is essential for the general practitioner to know about the usual parasites of man. We note however an entire absence of any mention of eosinophilia as a usual symptom of trichinosis, a symptom often of great value in making a diagnosis. Not sufficient emphasis is laid, we think, upon the anaemia almost always accompanying uncinaria infection and

often infection with *Bothriocephalus latus*. That no mention is made of the extensive American work upon uncinariasis is perhaps not strange in a German work; notes upon this phase of the question might however have been added by the American editors. The article is well illustrated (with original cuts), a point of great value in a study of animal parasites.

Volume four comprises a long chapter on "Diseases of the Genito-Urinary System," by Dr. L. LANGSTEIN, Berlin, and chapters on diseases of the nervous system, divided as follows: "Special Anatomy of the Child's Brain," by Prof. H. PFISTER, Freiburg; "Organic Diseases of the Nervous System," by Dr. J. ZAPPERT; "Functional Diseases" and "Diseases of the Meninges," both by Dr. M. THIEMICH of Breslau. A chapter on "Diseases of the Skin (non-tuberculous)," by Dr. E. GALEWSKY of Dresden, follows, and the text of the volume is concluded with a chapter on "Tuberculous Diseases of the Skin," by Dr. C. LEINER of Vienna. The chapter on skin diseases is not as good as many of the others, the treatment of the subject being too brief considering the importance, as the author notes, of skin diseases in infancy and childhood.

The volume concludes with a general index for the entire work. This index is not as complete as we think it might be.

The press work and general appearance of the books is most excellent, though we note occasional typographical errors. The illustrations deserve special comment. There are sixty-one full-page plates in black and white and in colors, and 430 text cuts, besides numerous tables and charts. Nearly all of the articles are illustrated, some of them obviously lending themselves more to illustration than others, and it may be said that as a whole the illustrations are most excellent and adequate to their subjects. The largest part of the text illustrations are reproductions of case photographs. We think some of them are not as good as in the original German edition. The colored plates are especially fine and it seems as if it would be difficult to surpass them; some of them are the finest we have seen in medical literature. It is difficult to choose between them but attention is especially called to those illustrating measles, scarlet fever, diphtheria, variola and varicella, syphilis, scrofula, tuberculosis, eczema and impetigo.

The work is a most excellent one, we feel we cannot praise it too highly, and it should be in the hands of all interested in the subject of Pediatrics.

C. K. W., JR.

Diseases of the Heart. By Professor TH. VON JURGENSFN, of Tübingen; Professor DR. L. KREHL, of Greifswald; and Professor DR. L. VON SCHROTTER, of Vienna. Edited, with additions, by GEORGE DOCK, M. D., Professor of Medicine, University of Michigan, Ann Arbor. Octavo of 848 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, \$5.00 net; half Morocco, \$6.00 net.

The set of ten volumes originally planned for this series of translated monographs was completed some time ago, in fact one at least of the original ten has been issued in a second edition. The special volumes

promised to supplement the original series are now in process of publication. Of these, the present volume is the second to appear and like all its predecessors is a most admirable work. The mere mention of the names of its collaborators suffices to guarantee its contents; von Jürgensen, von Schrötter and Krehl are an unexcelled trio of authorities upon the heart and its affections, combining sound learning and clinical experience with investigation of high order along the channels of anatomy, physiology and pathology.

The work is divided into five sections; Insufficiency of the Heart, Endocarditis, Valvular Disease, Diseases of the Myocardium and Nervous Diseases of the Heart, and Diseases of the Pericardium. The first three sections are from the pen of Prof. von Jürgensen, the fourth from that of Prof. Krehl and the last by Prof. von Schrötter. In some respects this is a not entirely natural division of the subject, but is more than compensated for by certain other excellences. The fourth division is naturally the largest of the five as the heart muscle is so often involved in other diseases not primarily cardiac, and equally naturally the last section is the shortest.

The text is well illustrated by charts, diagrams and photographs of pathological specimens. References to the literature on the various subdivisions of the subject are full, the index is long and complete and the translation is well done. The editor's work shows care and accuracy, and the additions bringing the subject matter well up to date are numerous.

C. K. W. JR.

A Text-Book of Surgical Anatomy. By WILLIAM FRANCIS CAMPBELL, M. D., Professor of Anatomy at the Long Island College Hospital. Octavo of 675 pages, with 319 original illustrations. Philadelphia and London. W. B. Saunders Company, 1908. Cloth, \$5.00 net; half Morocco, \$6.50 net.

The purpose of this book has been to present to the student and practitioner the essentials of practical anatomy. The author has not attempted to present all the anatomic data. He has emphasized those structures and regions which have a peculiar interest for the surgeon. The subject matter is considered under six divisions, as follows: The head and neck, the thorax, the upper extremity, the abdomen and pelvis, the spine and the lower extremity. The work is illustrated largely by drawings upon photographs of the living subject. They serve their purpose admirably and materially enhance the value of the text. The book contains 675 pages with 319 original illustrations. The author and publishers are to be complimented on this production. It will be found very serviceable to the surgeon.

G. E. B.

Subcutaneous Hydrocarbon Protheses. By F. STRANGE KOLLE, M. D. The Grafton Press, New York, 1908.

This volume of 153 pages treats in a very satisfactory way the subject of the correction of defects about the face, neck and shoulders by the

subcutaneous injection of paraffine or an allied substance. That this particular method has at present a place in cosmetic surgery I think cannot be denied. The indications for its use, the methods of employment, and the untoward results that may follow are considered in detail. The subject matter is well presented. The book will be found useful to those interested in this branch of surgery. A bibliography is appended.

G. E. B.

The Correction of Featural Imperfections. By CHARLES C. MILLER, M. D. Including the description of a variety of operations for improving the appearance of the face. 136 pages. 73 illustrations. Prepaid, \$1.50. Published by the Author, 70 State St., Chicago Ill.

The author considers in this small book a great variety of developmental imperfections and a few pathological conditions affecting the head and face. Many of the operations and methods which he advocates for their correction are of questionable value and their propriety doubtful. The description of his operations are neither clear or complete. The illustrations are very crude.

G. E. B.

Transactions of the American Urological Association. Edited by CHARLES GREENE CUMSTON, M. D. Printed for the Association at the Riverdale Press, Brooklyn, Mass., 1908. Vol. I.

In this volume is presented the proceedings of the sixth annual meeting of the American Urological Association held at Atlantic City, N. J., June 3 and 4, 1907. It contains fifteen original articles comprising in all 235 pages. The volume is well bound and contains a very satisfactory index. Many of the articles are of exceptional value.

G. E. B.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. EDMUND VON NEUSSER, M. D., Professor of the Second Medical Clinic, Vienna; Associate Editor, Nothnagel's Practice of Medicine. Authorized English translation by ANDREW MACFARLANE, M. D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College; Attending Physician to St. Peter's and Child's Hospital and Albany Hospital for Incurables. Part II. Bradycardia and Tachycardia with bibliography. New York. E. B. Treat and Company, 1908.

Von Neusser has well condensed within a short monograph a large amount of clinical observation bearing upon circulatory disturbances. Bradycardia and tachycardia are separately taken up and the etiological factors and the pathogenesis of each concisely and clearly discussed. Of special value are his studies upon the diagnostic and the prognostic aspects of the pulse as they obtain in various pathological states. Dr. MacFarlane has rendered a good service in making this volume accessible in the English language.

The English edition contains, in addition, abstracts of Dr. Howell's papers on "The Cause of the Heart Beat," Dr Adams' original article on what is at present known as "Stokes-Adams Syndrome," and also a bibliography on bradycardia and tachycardia.

N. A. P.

Hospital Training-School Methods and the Head Nurse. By CHARLOTTE A. AIKENS, late Director of Sibley Memorial Hospital, Washington, D. C.; Associate Editor of the National Hospital Record. 12mo of 267 pages. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, \$1.50 net.

The book is devoted to the consideration of many an important problem connected with the training of nurses. The essentials of nursing, methods of instruction, scope and length of the course, the relation of the Head-Nurse to the hospital, physicians, pupil nurses and a good many allied topics are fully discussed. The views advanced and the methods advocated are sane and practical and are the outcome of the author's long and varied experience in this special field of work.

N. A. P.

Diseases of Children for Nurses. Including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene, and Nursing. By ROBERT S. McCOMBS, M. D., Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia. Octavo of 431 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1907. Cloth, \$2.00 net.

It is still a mooted question as to how much knowledge of medical sciences a nurse must possess for the intelligent performance of her duties. In dealing with the *Diseases of Children*, the author has done well in confining himself to the essentials of the subject matter and also presenting them in a clear and intelligible manner. The diseases of the respiratory, gastro-intestinal, circulatory and nervous systems, as well as those of the different organs are serially discussed, describing briefly the anatomy, pathology, symptomatology and treatment of each. The chapters devoted to infant feeding, hygiene and nursing are very good. There are a good many illustrations, some in colors, which help materially in elucidating the text and add a great deal to the utility of the volume.

N. A. P.

Motor Days in England. A Record of a Journey through Picturesque Southern England, with Historical and Literary Observations by the Way. By JOHN M. DILLON. With Maps and sixty-four Illustrations. G. P. Putnam's Sons. 1908. \$3.00 net.

The fine illustrations in this very attractive book give numerous glimpses of the beautiful, finished, historic English country side.

The text is interesting and instructive without being heavy. Five out of the twenty chapters are devoted to Oxford. Places associated with Wordsworth, Coleridge, Shelley, Jane Austen, Gilbert White and many other famous personages are visited. The book claims to give merely an account of the experiences and impressions of a party of friends. It will inspire many others to follow their example, and be a source of enjoyment to those who have to stay at home.

W. M. G.

GYNECOLOGY

Edited by John A. Sampson, M. D.

A Study of Pseudomyxoma Peritonei with the Report of a Case.

EDWARD A. SCHUMANN. *Surgery, Gynecology and Obstetrics*, January, 1908.

The writer reports the following case in full and refers to the other cases which have been published. The patient, a nulliparous widow aged fifty-three, was admitted to the Gyncecan Hospital of Philadelphia in November, 1904. For four months the patient had noticed that her abdomen had been gradually increasing in size. There had not been any definite symptoms, pain or cachexia. Upon examination the patient was found to be well nourished and the abdomen greatly distended with fluid. Vaginal examination revealed a mass to the left and posterior to the uterus, there was marked bulging of the vaginal vault.

On opening the abdomen, a large amount of semi-solid gelatinous material poured out. About two gallons of this material was removed. The omentum had been converted into a mass composed of myriads of small cysts imbedded in loose connective tissue and bound together with partially organized masses of pseudomucin. The appendix had been transformed into a pyriform cyst. Otherwise the intestines were normal. A thin walled ruptured cyst-adenoma of the left ovary was found in the pelvis. The cyst, appendix and portion of the omentum were removed. The abdomen was closed without drainage and the patient made an uneventful recovery.

She was re-admitted in January, 1907, with a greatly distended abdomen. Laparotomy was again undertaken and about three gallons of the same kind of fluid was removed. The convalescence was again uneventful but four months later the patient's abdomen again became distended with fluid and there was distinct evidence of cachexia.

Microscopically the ovarian cyst proved to be a true pseudomucinous cyst-adenoma glandulare. The omentum consisted of a connective tissue framework between the trabeculae of which were small cystomata and thick, amorphous, structureless pseudomucin. These cysts resemble in structure the cystadenoma of the ovary. The material removed at the second operation resembled that removed at the first except that there seemed to be a greater proliferation of the epithelial cells.

From a study of his own case and the fifty-six cases reported in the literature, the writer draws the following conclusions:

1. "The foreign body peritonitis of certain observers, pseudomyxoma peritoni, and secondary myxoma of the peritoneum are different stages or phases of one and the same condition.
2. The disease depends per se upon the presence of a ruptured multilocular cystadenoma of the ovary.
3. It is a dangerous disease, both as to immediate post-operative results and also by reason of its tendency to recurrence and to the development of cachexia.
4. In as much as it histologically corresponds accurately with the processes of cancer formation, pseudomyxoma peritoni must be regarded as a form of carcinoma."

Pulmonary Complications following Anaesthesia.

OTIS B. WIGHT. *John Hopkins Hospital Bulletin*, March, 1908.

Of about 9,000 patients who had been anaesthetized in the Gynecological Service of the Johns Hopkins Hospital (until August, 1903), twenty-nine developed pneumonia soon after the operation, and of these six died. In twenty-four cases the disease appeared within the first eight days. Twelve cases were of the lobar type and seventeen bronchial. The anaesthetic employed was one of the following: chloroform alone, chloroform and ether, ether alone, nitrous oxide and ether, cocaine and gas (one case). (Unfortunately the writer does not mention the number of cases of pneumonia following each of these anaesthetics.)

Four of the twelve cases of lobar pneumonia died *i. e.*, thirty-three per cent. Empyema or abscess of the lung did not follow any of these cases. The right lung was most often involved, the lower and upper lobes being involved about an equal number of times. The type of lobar pneumonia apparently differed from that usually seen in the medical wards in the following ways:

1. The temperature was lower, rarely reaching 102° and was more irregular.
5. Cough was not as marked or as severe and the sputum was rarely occurred.
3. There was greater freedom from complications.
4. The central type prevailed, the lungs signs appeared late.
5. Cough was not as marked or as severe and the sputum was rarely blood tinged.

The symptoms of the onset were similar to those of pneumonia developing under other conditions and these usually appeared on the second or third day after the anaesthesia.

Of the seventeen cases of broncho-pneumonia two died *i. e.*, twelve per cent. The symptoms of the disease usually appeared from one to three days after the operation and lasted from seven to twelve days.

The writer discusses the various theories as to the etiology of post-operative lung complications as: the irritant action of the anaesthetic,

aspiration of mucus, vomitus, emboli, toxic effect of anaesthetic on heart and blood vessels, presence of pneumococci and other bacteria in the mouth and throat, extension of infection through sub-diaphragmatic space, cooling of the body, limitation of lung expansion, lessened resistance of patient.

He advocates the following procedures to lessen the liability of this complication. "Disinfection of the mouth and nose by mild antiseptic gargles and douches should be a routine measure, careful administration of the anaesthetic by the drop method on an open mask, given slowly and steadily at first so that the patient is not suffocated and does not struggle is all important. In regard to position, the head should be low and to one side so that the mucus can flow easily; the jaw kept forward to keep the tongue from dropping back into the pharynx; more care should be taken to keep patients warm and dry. There should be warm pads on the table and warm jackets and leg coverings should be worn. The sterile dressings should be dry, the patient should be warmly covered up when removed from the operating table to bed."

The Results of the Extensive Abdominal Operation for Uterine Cancer.
(Die Leistungen der erweiterten abdominalen Uteruskrebs operation.)

E. WERTHEIM. *Zentralblatt für Gynäkologic*, February 8, 1908.

Wertheim has had 120 cases of uterine cancer in which five years or more has elapsed since the operation. Of this number, 27 died from the operation including 2 who died from pyelitis, 1, one year after the operation and the other a year and a half. In the first 30 cases, 14 died from the operation and in the remaining 90 only 13. Of the 93 cases surviving the operation, 6 were excluded; 3 of them being cancer of the body of the uterus, 1 carcinoma of the vulva and 2 cases who died from other conditions having no relation to the carcinoma or the operation. Of the 87 cases remaining, 51 are at present free from cancer, *i. e.*, 58.6% and as the operability of the cases at that time was 42.2% the absolute result according to Winter's formula is 24.7%. The absolute result according to Winter is represented by the percentage of cures (those free from cancer five years after the operation) multiplied by the operability (percentage of cases operated upon) and divided by 100. As expressed in German

$$A \text{ (nach Winter)} = \frac{O \times D}{100}$$

According to Waldstein, the primary mortality must be considered, *i. e.*, the percentage of cures are multiplied by the operability and this result by the percentage of cases surviving the operation and this latter figure is divided by 1,000. As expressed in German

$$A \text{ (nach Waldstein)} = \frac{O \times D \times (100 - M)}{1000}$$

According to Waldstein's formula the absolute result is represented by 19.16% instead of 24.7% (of Winter's). If the first 30 cases, with the

high primary mortality, are excluded the result according to Waldstein is 24.27%.

When Wertheim employed the vaginal route his best statistics were only 10% free from cancer after five years and an absolute result (Winter) of only 3-4%.

The mortality of the operation has been greatly lessened, 14 deaths in the first 30 cases, 13 in the next 90 and in the last 158 cases (there having been 400 in all) only 12. He attributes the great decrease in the primary mortality to several factors such as shortening the duration of the anaesthetic, a more exact technique in operating especially in the control of the large veins between the parametrium and wall of the pelvis by specially constructed clamps, thus saving time and the loss of blood, and likewise the control of the paravaginal veins by ligatures. By preserving the blood supply of the lower ends of the ureters the danger of necrosis has been lessened but if the growth is adherent to them it is apt to occur. There were 10 instances of ureteral necrosis in his last 158 cases. Seven of these healed spontaneously.

In three of the cases who are free from cancer after five years, metastases were found in the pelvic lymph nodes at the time of operation.

The Etiology of Retroflexions of the Uterus Occurring in the Puerperium.
(Zur Ätiologie der Retroflexio Uteri puerperalis.)

LUDWIG PINCUS. *Zentralblatt für Gynäkologie*, February 22, 1908.

The writer supports Olshausen's view that the chief cause of this condition is the greatly thinned wall of the uterine cervix which exists after childbirth in primipara and that the parietic bladder, so frequent in primipara, must be looked upon as a more remote cause of the retroflexion. The over distended bladder makes pressure against the anterior surface of the body of the uterus and as the cervix is flail, the uterine body is easily bent backwards and maintained in retroflexion by intra-abdominal pressure.

Pincus has always examined his puerperal patients before dismissing them and has carefully noted the size and position of the uterus. As a result of his own observations he has arrived at the following conclusions.

1. The exact time of the origin of this mobile retroflexion exists only in the first puerperium. The histories of the patients are usually in accord with this statement and all complicated retroflexions are not considered.

2. The distended bladder acts as the immediate cause of this condition and catheterization is much more frequently necessary in primipara than in multipara, and this is often difficult to have done punctually in private practice. He has all his cases lie on their side, as much as possible, so that the full bladder and intra-abdominal pressure will have less effect on the displaced uterus.

3. If necessary, he introduces a Hodge pessary at the end of the fourth week of the puerperium, and has the patient wear it until after the second or third menstruation, seldom longer, and at the same time gives intra-muscular injections of Ergotin.

The Influence of the Central Nervous System in the Causation of Uterine Haemorrhages.

HUGO EHRENFEST. *American Journal of Obstetrics*, February, 1908.

The writer calls attention to the fact that uteri are removed for bleeding and their microscopic study may fail to explain its cause. He reports a case of his own occurring in a patient suffering from hysteria, where the bleeding which had started subsequent to an abortion and a curettement persisted continuously in spite of all therapeutic efforts for six months and finally hysterectomy was done. The endometrium in this case was practically normal and the microscopic examination of the uterine wall failed to account for the haemorrhage either from sclerotic changes in the blood vessels or a relative insufficiency in either the uterine musculature or elastic tissue. The author believes that the hysteria was the only possible explanation of the uterine bleeding and he believes that the bleeding arose from a local vasomotor disturbance due to an abnormal tonus of the uterine musculature brought about by an abnormal influence from the central nervous system.

He records numerous references and observations from which he draws the following conclusions:

1. Impulses coming from the central nervous system may alter the normal function of the uterus in regard to both menstruation and labor.
2. The resulting effect may appear either in the form of vaso-motor anomalies (amenorrhoea, menorrhagia and irregular haemorrhages) or in the form of motor disturbances (sudden cessation or sudden beginning of uterine contractions).
3. With the exception of rather vague reference to disturbances in the vaso-motor system and the uterine tonus no explanation is extant of the exact mechanism by which such a nervous influence may cause the symptom of amenorrhoea or metrorrhagia.

Any explanation of this exact mechanism must be limited to the following physiological and histological facts:

1. The blood circulation in the uterus in a very marked degree stands under the influence of the vaso-motor system, the uterus being an erectile organ.
2. The uterine musculature shows rhythmic spontaneous contractions.
3. Changes in the tonus of both the uterine musculature and vessel walls are subject to the influence of the central nervous system.
4. Uterine contractions at times (as when the impulse reaches the uterus by way of the nervi erigentes) is accompanied by active vasodilation.

5. The sudden cessation of a menstrual flow or a temporary amenorrhea developing as the result of an emotion or in the course of certain diseases of the nervous system, often cannot be due to organic lesions of either uterus or ovaries.

6. The sudden appearance of a haemorrhage as the result of a mental shock cannot be explained like the menstrual flow as immediately due to certain degenerative processes in the walls of the endometrial vessels.

7. A sclerosis of some of the arterial vessels must be considered a physiological condition in a multiparous uterus.

The writer believes that the bleeding in these cases is due to a localized increase in the blood pressure in the uterus which will result from any tonic contraction of the uterus which is slight enough not to cause a compression of the arteries but strong enough to effect a cessation of the rhythmic contractions of the uterus. Such a contraction may be described as a temporary increase of the uterine tonus. The thinner walled veins will be compressed by this contraction while the arteries remain unaltered and a passive hyperaemia is produced which is most pronounced in the capillaries of the endometrium. As a result of the passive hyperaemia and the locally increased blood pressure the endometrial capillaries become greatly dilated and finally rupture and uterine bleeding occurs.

He concludes that this theory explains the characteristic features of a normal menstrual flow on the basis of a normal activity of the uterine musculature and proves that all the known functional disorders of the menstrual flow may be due to anomalies in this motor activity. Motor disturbances, however, can be interpreted only by a faulty innervation and therefore the deduction seems permissible that this theory indirectly proves the significance of an anomalous influence of the nervous system in the causation of certain functional disorders of the menstrual flow.

ALBANY MEDICAL ANNALS

Original Communications

RECENT ADVANCES IN OBSTETRICS

The Introductory Lecture of the Seventy-eighth Session of the Albany Medical College Delivered September 22nd, 1908.

By JAMES P. BOYD, M. D.

Professor of Obstetrics, Gynecology and Diseases of Children, Albany Medical College.

Of late years an increasing amount of attention has been given to the influence of toxic material retained in the body of the pregnant woman as an agent in producing many of the pathological manifestations of pregnancy. The metabolism characteristic of pregnancy has not yet been sufficiently cleared up to explain the source of the toxic material so dangerous to the life of mother and child. The fact that derangements of nutrition produce their effects on not one but two organisms, each dependent upon the other for proper assimilation and excretion, accounts for the facility with which they may pass beyond the border land of physiology and become pathological.

Since the appearance of Bouchard's work, entitled "Leçons sur l'auto-intoxication," a number of French writers, among them Pinard Budin and Bouffe de Saint Blaise, have investigated this subject and believe that but few women pass through pregnancy without more or less toxemia due to a condition of auto-intoxication. Headache, vertigo, insomnia, dyspepsia, urobilinuria, jaundice, albuminuria vomiting, delirium and convulsions are some of the symptoms of the toxemia of pregnancy mentioned by Bouffe de Saint Blaise.

"Veit, in Germany, advanced a somewhat similar view, but held that all of the disturbances of pregnancy from slight abnormalities of pigmentation to eclampsia, result from cytolytic processes following the entrance of chorionic tissue and fetal ectoderm into the maternal circulation." More recently albuminuria, vomiting of pregnancy, yellow atrophy of the liver and eclampsia

have been considered manifestations of disturbed metabolism by Stone, Strauss, Ewing and Edgar and classified under the toxemia of pregnancy,

Williams does not agree with the teaching of these authors and states that "chemical analysis of the urine, as well as the histological study of tissues obtained at autopsy clearly indicates that essential and characteristic differences exist between the various conditions thus grouped together." For those who are not willing to accept the extreme views of Stone, Ewing and others that all forms of vomiting during pregnancy should be grouped under the heading of toxemia of pregnancy, the division of them all into reflex, neurotic and toxemic will enable us to omit the consideration of the first two types which are well known to physicians and devote our attention to the most serious one of all, pernicious vomiting of pregnancy.

In this there are characteristic changes in the urine and also definite lesions in the liver and kidneys. It was first shown in Williams' clinic that the urine in such cases presents a high ammonia coefficient, indicating that a much greater proportion of the total nitrogen is excreted in the form of ammonia than usual. Normally in the first half of pregnancy the ammonia coefficient varies between four and five per cent., but in toxemic vomiting it may rise as high as ten, twenty, thirty or even forty per cent. Although in 1879 Matthews Duncan called attention to the fact that the condition was often connected with grave diseases of the liver, it seems to have made little impression and it was not until the work of Stone, Ewing and Williams showed that in many of the fatal cases lesions were present in the liver identical with those occurring in acute yellow atrophy that it was finally admitted. In such cases there is a profound necrosis of the central portion of the lobules, while the periphery remains intact and in one of Williams' cases the destruction of tissue was so great that practically nine-tenths of the entire liver was thrown out of function.

One of the latest contributions to obstetric pathology is the article of Cragin which appeared last spring in the *Obstetric Journal*. He states that the chief pathological lesion found in pernicious vomiting is a fatty and hydropic degeneration of the liver which is apt to be diffuse but in some cases is zonal and goes on to necrosis. This zonal necrosis when present is more apt to be central or between the center and the periphery of the

lobule. In this fatty degeneration and autolysis of the liver, although hemorrhage from the alimentary canal is not uncommon, there seems to be little tendency to hemorrhage into the liver itself, thus differing from the lesion often found in eclampsia. In some cases, especially if the condition has existed for a considerable time, the lesion is practically identical with that of acute yellow atrophy. The kidneys, in cases of pernicious vomiting, show more or less degeneration of the epithelium of the convoluted tubules. The associated urinary findings in these cases of pernicious vomiting are the presence of acetone, diacetic acid, beta oxybutyric acid, indican trace of albumin, a few casts and bile pigment. In addition to these there is found abnormal nitrogen ratios, showing a disturbance of proteid metabolism, with faulty oxidation."

In eclampsia Cragin recognizes clinically two types of cases: the hepatic type, in which the liver is the organ chiefly involved and the kidney but little involved; and the nephritic type in which the kidneys seem to be the organs chiefly affected.

"Since the appearance of the monograph by Schmorl in 1893 the tendency has been to regard the liver lesion in all cases of eclampsia as more characteristic than those of the kidney, and to consider them necroses, either hemorrhagic or anemic, always situated at the periphery of the lobule, produced according to Schmorl by thromboses in the smaller portal vessels." Cragin does not find in the material at his disposal the hepatic lesions in eclampsia as definite or uniform as would be inferred from Schmorl's monograph.

In the cases dying of eclampsia, which Cragin classified as belonging to the hepatic type, the lesions in the liver have been marked, while in the cases dying of eclampsia of the nephritic type, the hepatic lesions have been slight; so slight in fact in some cases that different pathologists, to whom the slides were shown, pronounced the liver normal.

The nitrogen partition as it occurred in the urine of four cases of the hepatic type and five cases of the nephritic type of eclampsia is given. The figures show a marked resemblance between the hepatic type of eclampsia and the pernicious vomiting of early pregnancy, i. e., ammonia nitrogen amido acid, and undetermined nitrogen above normal; urea nitrogen below normal. There was often quite a resemblance in the hepatic lesions

in the two conditions, i. e., necrosed cells in the center of the lobule, cells with fatty degeneration near the periphery. In the nephritic type of eclampsia the nitrogen ratios varied but little from the normal.

Thanks to the careful investigations of recent years, our knowledge of obstetric pathology has enabled us to understand the ease with which an infection can be carried from vulva to vagina and also from vagina to sterile uterus and also how the too vigorous use of a douche nozzle, fingers or curette can change a local into a general infection.

The recognition of the two principal forms of puerperal endometritis by bacteriological examination of the uterine lochia has warned us when a prompt use of a dull curette or better the fingers will best empty the uterus of its infected contents and also when the smooth endometrium and the presence of streptococci indicate clearly enough that no operative interference can be tolerated. The prevention of puerperal infection by a carefully managed third stage of labor is now well understood. A firmly contracted empty uterus is a sure preventive of infection. Prompt recognition of lacerations of the vulva, vagina, pelvic floor and cervix uteri and their repair after the conclusion of labor also serve to prevent infection. I think, however, that it is exceptional to find a laceration of the cervix of sufficient extent to require repair at this time. In case of hemorrhage of alarming nature, the sutures should be put in at once. As a rule I do not advise the repair of the cervix uteri immediately after labor unless one is fortunate enough to control the environment of the patient and has skilled assistance. The other forms of laceration, as a rule, can be repaired soon after labor. Although obstetricians are in favor of opening early collections of pus in the tubes ovaries or broad ligament, very few are willing to remove the infected uterus at an early period.

In the vast majority of cases, hysterectomy is not indicated. The suggestion of Freund, Trendelenburg and Bumm that the thrombosed vessels in these cases be exposed by laparotomy and excised or ligated distal to the thrombus has been carried out. Both Bumm and Trendelenburg have reported successful operations of this character and Williams has also had good results in two of his cases.

"Recent knowledge of chorio epithelioma demonstrates well,"

says Cragin, "that prolonged menorrhagia and metrorrhagia following labor abortion or operation for hydatidiform mole, should be looked upon with suspicion and that early diagnosis and early hysterectomy alone give hope of satisfactory results in that dread disease.

Although the prevention of ophthalmia neonatorum by careful management of the infant's eyes at birth by the use of boric acid and the silver salts is now well known, sufficient attention has not been given to the care of the nose, mouth, skin and umbilicus of the new born infant and as a consequence cases of infection still occur. The aseptic ligation of the cord and its subsequent care is of the utmost importance in guarding against infection.

It is unfortunate that the idea should be so widely prevalent, especially amongst women of the poorer class, that a confinement being a natural, physiological act, no care is necessary during pregnancy. Too often, as a result of this apathy or indifference on the part of the pregnant woman, physicians are summoned too late to correct a malposition or complication which should have been recognized and treated long before labor began.

Recent scientific researches indicate the latest and best methods for the care of pregnant women. The ordinary examination of the urine for albumin and casts and the hypobromite test for urea is not sufficient. In suspected cases of pernicious vomiting, the urine should be examined by a chemist, the nitrogen partition determined and the presence or absence of acetone diacetic or beta oxybutyric acid, indican and bile pigment ascertained, and the total amount of urine passed in twenty-four hours estimated. Examination of the heart, lungs, viscera and nervous system; examination of the blood in cases of a possible secondary anemia of pregnancy; examination of the feces to determine the presence of bacteria which may favor intestinal toxemia and also in certain cases examination of the gastric contents as a diagnostic measure. All of these methods of examination may be required in complicated cases. The physician should assume charge of the patient as soon as the diagnosis of pregnancy is made. The patient should be instructed in regard to her diet, exercise and amount of sleep. The condition of skin and bowels ascertained. The nipples should receive careful treatment. Usually about six weeks before confinement the

pelvic measurements are taken, the position and size of the fetus, also its heart sounds ascertained, anything abnormal about abdomen or pelvis of patient noted.

"Recognizing the high mortality in premature children when labor was induced for pelvic contraction, Prochownik applied the principles of dieting which he had previously used for reduction of weight in adults, for the purpose of reducing the weight of children born at term. This procedure was employed as a substitute for the induction of premature labor in cases of moderate pelvic contraction. The results were favorable in all instances." In cases of moderate pelvic contraction or when dystocia from other causes is anticipated, Prochownik's diet should be tried. Abundance of fresh air and walking exercise. In the last months of pregnancy an abdominal binder or corset is of the greatest assistance in many cases. In some patients the administration of small doses of quinine or strychnine regularly for the last weeks of pregnancy not only strengthens the labor pains but prevents post partum hemorrhage by acting on the flabby uterus.

The importance of early diagnosis, and treatment of occipito-posterior positions of the vertex is now conceded by obstetricians. No cases of malposition require so much skill as these for their correction. By manual interference aided by the knee chest, Trendelenburg and Walcher positions these difficult cases of persistent occipito posterior position can be successfully managed. The high fetal mortality and the extensive lacerations of the cervix uteri, vagina and pelvic floor of the mother have in the past caused obstetricians to dread these cases. The cephalic application of one of the newest forms of axis traction forceps is of the greatest value in these cases. Rarely the forceps may be used to rotate the occiput forwards.

No subject connected with obstetrics has been thrashed out more effectively of late than the intra pelvic versus the abdominal method of dealing with mechanical obstructions to delivery in cases of confinement. No subject has interested me more than this one; certainly no other has given me so much care and anxiety since that time long ago when I was called to take the chair of obstetrics in this college.

"It must not be forgotten," as Reynolds in a recent article on this subject remarks, "that it is still true that operative obstetrics covers and should cover but a small percentage of the

gross amount of obstetric work, and with the operative movement which is coming over the specialty it is perhaps not unwise to emphasize the fact that successful normal labor is still and must always remain the best method of delivery."

In the choice between the intra pelvic and abdominal methods of delivery in the lesser degrees of mechanical obstruction, we must consider the relative maternal and fetal mortalities which may be expected of the different methods. Before deciding upon any operative procedure, it is to be borne in mind that although spontaneous delivery of a fully-developed child cannot occur when the conjugata vera measures seven centimetres or less; above this limit it will occur in a large proportion of cases.

In 1901 Williams reported 278 cases in which nearly 78 per cent. of the cases ended spontaneously. In 972 contracted pelves occurring in 10,000 cases at the Sloane Maternity, 66 $\frac{3}{10}$ per cent. terminated spontaneously. Edgar reports 70 $\frac{59}{100}$ per cent. as terminating normally.

The moulding of the fetal head during labor must always be considered. Although pelvimetry is a necessity for routine examination of patients, the external measurements taken do not always give us the truth. In several cases I have found the external measurements normal and yet the internal examination revealed a marked contraction of the pelvis. Frequent and careful examinations of the patient in suspected cases during the latter period of pregnancy may and usually will prevent difficult obstetric operations. Important as it is to determine as accurately as possible the size of the fetal head and its relations to the pelvis, the methods at one's disposal for ascertaining this are not always satisfactory.

Perret has devised a special instrument for measuring through the abdominal wall the occipito-frontal diameter and he estimates the bi-parietal diameter as two centimeters less than that measurement. Stone uses an ordinary pelvimeter and subtracts two centimeters from the occipito frontal measurement when eleven centimeters or less; two and five-tenths centimeters when it is over eleven centimeters. For a final test most reliance must be placed on Müller's supra pubic pressure.

In some cases an anesthetic will be necessary in order to make a careful examination. The vitality, the muscular and nervous endurance of the patient must also be considered.

Many obstetricians of this country have followed the teaching

of French and German writers in condemning the induction of premature labor in cases of contracted pelvis on account of the high fetal mortality. So far as the major degrees of pelvic deformity are concerned, we are all agreed that induction of premature delivery should not be undertaken on account of the high fetal mortality. In the lesser degrees of contraction I agree with Norris and Hirst that the skillful induction of labor in the last weeks of pregnancy should always be carefully considered. Many cases are often lost through errors in obstetric judgment after version or difficult forceps which might have been saved by this operation.

Hirst reports several hundred cases of induced labor. He says that women with a conjugata vera of about eight centimeters can be delivered safely and easily in the last month of gestation who at term would require cesarean section or pubiotomy. The mortality of the premature infants is little if any greater than that of infants born at term in unobstructed labors. "Those who have had the largest experience with induction of premature labor are its warmest advocates, whilst its bitterest opponents are those who have had no personal experience with it at all." There is little that is new to be said about version or forceps; both are valuable obstetric procedures. The tendency now is to resort more frequently to the forceps than to version. Better knowledge of the mechanism of labor and newer and more perfect axis traction forceps, have made the forceps operation the preferred one with most physicians.

"It must be remembered," as Reynolds says, "that the dangers of intra pelvic operations to mother and child are all of them those which result from hard or rapid pulling." When the conditions are such that extraction is possible without hard pulling, the intra pelvic operations under modern conditions and in skilled hands are minor operations. The elective cesarean section at the beginning of labor when performed under favorable conditions has no greater maternal mortality than the intra pelvic operations at the time of their election. The maternal mortality of this section rises steadily in proportion to the length of labor endured before its performance. The cesarean section has been done for cases of eclampsia. The mortality for the mother in these cases, according to Charpentier, is over thirty-six per cent.

Lawson Tait advocated the performance of cesarean section

in cases of placenta previa. The results so far have been very discouraging. If, in the future, expert obstetricians be allowed to select cases of eclampsia and placenta previa for section, the results will be far different. I still believe that in a very few cases this operation is indicated. For a few cases of rigid cervix uteri, the vaginal cesarean section is indicated. The new operation of pubiotomy is still sub judice.

With the introduction of aseptic methods, the mortality from puerperal infection in hospital practice has changed from ten and fifteen per cent. to a small fraction of one per cent. On the other hand, Williams remarks that in private practice it is doubtful whether the results are materially better to-day than they were before the introduction of antiseptic methods, for the reason that the doctrines of asepsis have not yet permeated the rank and file of medical men, much less of midwives, to whose care is committed a very large proportion of obstetrical cases.

Ingerslev states that even at the present time in Denmark, with the single exception of tuberculosis, puerperal infection is the most frequent cause of death in women between the ages of twenty and fifty years.

Zinke, in an address which will be delivered to-day in Baltimore, calls attention to these facts and says, "that the problem of obstetrics will be solved when the custom of sending the pregnant and parturient women (victims of complications) to a maternity has become an established practice." For cases of eclampsia, placenta previa, and other complications of pregnancy and labor, I thoroughly believe that the hospital is the best place.

ADDRESS OF THE PRESIDENT OF THE FIRST DISTRICT BRANCH

MEDICAL SOCIETY OF THE STATE OF NEW YORK

*Read at Second Annual Meeting, held at Poughkeepsie, N. Y., October
21, 1908*

By S. W. S. TOMS, M. D.

Nyack, N. Y.

*Gentlemen—Delegates and Members of the First District Branch
of the Medical Society of the State of New York:*

If I were to conform to the usual custom in acknowledging the honor conferred upon me on this occasion in presiding over this distinguished gathering of physicians assembled from the six counties that comprise the First District Branch, I should be appropriating a distinction not meritoriously bestowed.

"Some acquire greatness, others have greatness thrust upon them."

I was neither elected, selected, nor appointed to preside at this meeting as your president. I was *commanded* to do so by the Secretary of the State Society in a letter received from him last March, because the gentleman, who by election and promotion should have filled the office, had defaulted in the ranks; and because of this "It was up to me"—in the memorable words of our courteous Secretary. If this imposes upon you any suffering I assure you it is the fault of the by-laws in not providing a second vice-president, upon whom I might shift any effect of your misfortune. I am here to fill a vacuum.

In my official visits to the County Medical Societies, I have gained some impressions of society meetings and organization, which seems to me an appropriate subject to present on this occasion. The papers and discussions on medical subjects, which it was my privilege to hear, were of a high order of merit, and marked evidence of harmony and good organization—the fruits of a reunited profession in this state—were everywhere conspicuous.

There is a notable disposition by some societies for an organized effort in protecting the public by suppressing quackery. New York county has been the pioneer and the

best exemplar in this commendable warfare on the charlatans of all kinds.

Crandall, in his report of seven years of official connection as a member of the Comitia Minora of the Medical Society of the County of New York, at its one hundred and second annual meeting, details in the most comprehensive manner the very successful work of that society. He very truly says: "Enforcement of medical practice laws, and the protection of the public against illegal and criminal practitioners, are among the duties which the County Society owes to the profession and to the public." "The State and County Societies in New York were organized pursuant to the important law of April 4, 1806, and the duty of regulating medical practice was placed on them by the State at their inception."

Kings county, I learn, has also done admirable legal work in prosecuting quacks.

At a meeting which I attended at White Plains, September 15th last, a report was presented of what had been accomplished by a letter written by the counsel for the State Society, co-operating with the Medical Society of the County of Westchester, in suppressing a notorious illegal practitioner. The evidence had been secured by the Medical Society with proof sufficient to have convicted him, at a trifling expense, had he not left the city very promptly; and cases from Yonkers, New Rochelle and other places in the county have been likewise dealt with, with gratifying results.

The presidents of the county societies have appointed committees to secure data from all sections where illegal and itinerant practitioners are violating the medical act and imposing on the public. The State Society is desirous of securing sufficient reliable information from such authentic sources as a basis for future legislation.

The difficulty which confronts a medical society in prosecuting local imposters is very obvious. The district attorneys and magistrates owe their appointment to the suffrages of the locality and are frequently disposed to regard complaints as persecutions; and it is for this very good reason the State Society, through its legal counsel, can be a more effectual agent in suits to suppress this form of imposition on the public.

When a medical society undertakes to act for the public good it deservedly commands respect and co-operation from public sentiment and esteem.

A medical society should not exist for the sole intellectual and social self-interest of its members alone. There is a sphere of usefulness in impressing its influence on the public mind in various educational ways.

The title of the presidential address of the American Medical Association, delivered at the fifty-ninth session, "A New Duty of the Medical Profession: The Education of the Public in Scientific Medicine," and more recently that of another address by Dr. M. Allen Starr at the opening of the Medical Department of Columbia University, "The Duties of the Medical Profession to the Public," present convincingly such obligations.

Dr. Burrell, in his address, outlines the objects of a medical society as follows:

"First—That individually its members may be better able to care for the sick.

"Second—That they may collectively be better fitted to prevent disease.

"Third—That they may know men and their ways and by social intercourse may live broader lives."

Besides the necessity for good organization, harmony and individual enthusiasm for scientific progress, a zeal for work is a prime factor. It is necessary that well-defined plans should be conceived and assigned to appropriate committees in order to achieve that success which, at the expiration of each year, the president of each county society may, with pride, recount in his valedictory.

The individual member in a county society becomes a unit in the state and national bodies, and upon him is conferred all the privileges these great medical associations possess.

He is elevated into the house of peers of the profession. There is something wrong with the man who to-day is not an equal with his brothers in this respect.

The principles of these great and honored organizations are to uplift every member they include. Every county officer would do well to read the article by Osler, quoted by Dr. J. Riddle Goffe in his address delivered October 17, 1905, on "Organization the Watchword of Creation."

"In too many towns and smaller communities miserable factions prevail and bickerings and jealousies mar the dignity and usefulness of the profession. So far as my observation goes the fault lies with the older men. The young fellow, if handled aright and made to feel that he is welcomed and not regarded as an intruder to be shunned, is only too ready to hold out the hand of fellowship.

"The society comes in here as professional cement. The meetings in a friendly, social way lead to a free and open discussion of differences in a spirit that refuses to recognize differences of opinion on non-essentials of life as a cause of personal animosity or ill-feeling. An attitude of mind habitually friendly, more particularly to the young man, even though you feel him to be the David to whom your kingdom may fall—a little of the old-fashioned courtesy which makes a man shrink from wounding the feelings of a brother practitioner—in honor preferring one another; with such a spirit abroad in the society and among its older men, there is no room for envy, hatred, malice or any uncharitableness. It is the confounded tales of patients that so often set us by the ears, but if a man makes it a rule never, under any circumstances, to believe a story told by a patient to the detriment of a fellow practitioner, even if he knows it to be true, though the measure he metes may not be measured to him again, he will have the satisfaction of knowing that he has closed the ears of his soul to ninety-nine lies; and to have missed the hundredth truth will not hurt him. Most of the quarrels of doctors are about non-essentials, miserable trifles and annoyances—the pin-pricks of practice, which would sometimes try the patience of Job. But the good fellowship and friendly intercourse of the medical society should reduce these to minimums."

The shortcomings in the medical profession are by no means confined to the "many towns and smaller communities" of Dr. Osler's picture. The good feelings between doctors occasionally is marred by inconsiderate remarks at public clinics—sometimes in the presence or hearing of the patients. It is not an uncommon thing for a doctor's patient to surreptitiously hie himself off to a clinic for various personal reasons—often with ulterior motives. They go without a card or letter of the attending doctor, and rarely inti-

mate their intentions. They relate their case in prejudiced misstatement or evasions, often to the attending physician's detriment, and gloat over any criticism they chance may hear concerning their former treatment or diagnosis.

They frequently have been influenced by busy-body friends and as the service they receive is free they grossly abuse the privilege of charitable institutions. When these cases present themselves in this way no exceptions would be entertained if they were postponed to another clinic day, in the meantime the attending physician communicated with to ascertain all available facts concerning their case.

By such a course there could never exist any reason for hard feelings between the physicians in attendance and the clinician. On the contrary, they would be enduring friends, avoiding an everlasting boycott of each other and mutually exchanging professional references in the future; at the same time disarming a patient wavering in his confidence in his doctor, who before wished to hear something that would possibly seriously injure his practice.

Medical societies should discourage the formation of medical clicks. It is not uncommon for a few men to band together for the purpose of controlling the society or dominating the management of a local institution for ulterior or selfish motives. "Close communions" are well estimated in their purposes by the public sooner or later. It brings well-merited reflection to those comprising them, but the incidental effects upon the institution or society with which they are officially associated are unfortunately such as to alienate the public support. These unprofessional methods smack loudly of the trust spirit of commercialism wherever they exist.

A languishing medical society should energetically investigate the causes for its conditions. A live, thriving society is a most profitable and stimulating source of energy, of social and professional uplift to its members, but needs new leaven occasionally. A careful and searching diagnosis for its ills should be instituted and the cause removed. "Expectant treatment" is not appropriate in bringing back a healthful state. The means adopted should be combined vigorous, internal and external treatment as the illness may be in its terminal stages. The strict following of well-con-

ceived details carefully outlined by the consultants as the best course to follow in achieving the most promising results should be consistently adhered to with good nursing, the proper social nourishment—plenty of fresh air—not overheated—and vigorous stimulation by energetic spirits.

A county medical society aspiring to the objects quoted from the address of the president of the American Medical Association, must take heed to the voices of the times.

It should take the initiative in each community in matters that present themselves regarding public health and the problems of sanitation. We have our canal zones and our New Orleans cesspools at our doors.

With the echoes of the recent International Congress of Tuberculosis sounding the knells of 200,000 deaths annually from a preventable disease, what is being accomplished to lessen this scourge of the White Plague outside of a few large cities?

The infant mortality* under five years of age per thousand, according to the last census of the United States, is as follows: Michigan, 121.3; Connecticut, 156.8; New York, 159.8; Massachusetts, 177.8; District of Columbia, 274.5. Are these mortality figures not sufficiently appalling to stir us to activity in preventing the "slaughter of the innocents?"

The principal cause for this high death rate is so well understood and can be so efficiently prevented that it becomes almost criminal for a community to allow conditions to exist which contribute to such a state of affairs. The poisons given these defenseless human beings in their food cannot be laid to criminal intent, but through the ignorance of their own mothers.

What does an average mother know about the cause of "Cholera Infantum?" The term itself fails to convey any meaning to her mind. It is a heritage of the past. Medical ignorance is deep-rooted in the minds of most people and they tenaciously cling to old ideas and superstitions. Most mothers even to-day believe that it is essential for a baby to have loose bowels at dentition time, or in the "second summer." If many medical terms were revised and called by their proper names much useful information would be

NOTE—Chairman's Address Sec. Dis. Children, 59th Sess. A. M. A. Jnl. Am. Med. Assn.

imparted to the public. "*Cholera Infantum*" should be supplanted by *Acute Milk Poisoning*. This appeals to the mind and comprehension of the most ignorant. What mother would continue to give a known poison to her offspring already made ill by a suspected food, that she knows becomes so, because of the conditions under which it is procured, marketed and kept?

This brings me to the subject already referred to, "A New Duty of the Medical Profession: The Education of the Public in Scientific Medicine."

Medical societies have a duty to perform along these lines: their members should be sources of information concerning those things which pertain to the welfare of the public in relation to the every-day conditions that menace their health.

Every mother who is feeding her baby artificially on cow's milk, or other food of which it is a part, should be told the danger of doing so while the child is suffering from a putrid diarrhea.

A mother never suspects for one moment that the diarrhea from which the child is sick is caused by the germs in the very food that has heretofore perfectly nourished her baby. She has no conceptions that these germs which originally polluted the milk were some of the flora of the cow's intestinal contents, and got into the milk from particles of excreta adhering to the animal's body. She does not realize that such milk—originally pure—if allowed to remain for twenty-four hours in a warm room will contain more germs than sewage. (Chapin.)

It is our duty to instruct mothers, and the public generally, as opportunities occur with these facts, and also to advise them to patronize the dairy who can show a clean bill of health—the man whose milk is certified that it has been produced under sanitary conditions and maintained at a temperature precluding the dangers from bacterial life.

All this is possible by changed methods of the farmer, the dairyman and the dealer. The slight advance in cost consequent on the necessary care of the milk is so slight as compared to the benefits, that such a consideration should not be taken seriously into account.

Another sanitary problem confronting the public welfare is that of school hygiene. In a recent address by Dr. Thomas

Darlington, Health Commissioner of New York City, at the eleventh annual conference of the Eastern Public Educational Associations, on the "Medical Inspection of School Children in New York City," some very startling facts were adduced. "During the school year just ended seventeen per cent. of the school children were excluded from attendance for varying periods of time for contagious diseases—and out of 141,908 children examined 108,329, or 76 per cent., were found to be suffering from non-contagious physical defects.

"Taking into account the time lost from school through illness, as well as acknowledging the inability of a physically defective child properly to assimilate his educational advantages, it is reasonable to assume that a large majority of these children failed of promotion because of their physical condition.

"In New York city alone (referring to the economic aspects of the question), I believe the greater part of the \$6,000,000 spent for *one year's* education of children who failed to profit by it, could have been saved by the investment of one-twentieth of that sum in proper and systematic physical examination of the children."

I quote again from the suggestive address of Dr. Burrell in this connection: "When it is recognized and brought home to the public that contagious diseases in children are to a degree unnecessary, that by proper sanitation and medical school inspection they may be in a large measure prevented, then people will demand that their little ones in public schools shall be protected against disease, which often leaves them invalidated and crippled for life. A child among the better classes to-day, until it begins to go to school, is usually free from contagious diseases, but the moment it enters a school it is subjected to dangers from infection which it rarely escapes."

The examination of school children in districts outside of the larger cities has not as yet been taken up in the state. Children residing in small towns or in the country are possessed of these same physical defects as city children—perhaps not in so large a ratio. They have many exposures to contagious diseases in the schoolhouses, which are generally most unhygienic, poorly cleaned and rarely ever disinfected. It is generally conceded that contagious diseases of childhood

could be absolutely controlled were it not for the schoolhouse. These children should be as well cared for as those in cities. If any of you will go to the crowded tenement districts of New York city and compare the school children of to-day with those of an older generation, you will be struck by the healthful and symmetrical faces of the former in marked contrast to the deformed and sickly physiognomies of the latter as you meet them on the streets. You will also appreciate what this medical work among the neglected school children is accomplishing. If these measures are adding to the efficiency of school life, how much more is it going to count in fitting these same citizens for the broader fields of usefulness in the after-activities of business careers where the voice, the hearing, and the eyesight are called into excessive use daily by the exigencies of our modern civilization.

The saving of life from pulmonary, throat, ear and eye diseases, and conservation of nervous systems consequent upon neglect of these important organs in early life, is beyond computing at this time.

A word about venereal diseases: Gonorrhea, next to measles, is stated to be the most prevalent malady of civilized countries. It is estimated that from seventy-five per cent. to ninety per cent. of all males have been infected. It is the cause of fifty per cent. to sixty-five per cent. of all capital operations in public hospitals on women; and the one factor of sterility, due to the genital infection of female infants.

It is the most difficult of all infectious contagious diseases to control in infants and foundling hospitals, asylums and day nurseries, most of whose inmates become infected; and furnishes thirty per cent. of blindness in children and over ten per cent. of all adults in asylums.

The County Medical Society should take more interest in the questions which are constantly presented to municipal boards of health.

There is the milk problem, already referred to, our potable water supply—ice supply—pure foods and drinks, as well as the control of contagious diseases.

The municipal health boards as now constituted are a reproach to our intelligences. They belong to the past, are antedated in all their methods, and inefficient in all things.

they undertake to perform. They are usually composed of political appointees put there for kindergarten purposes for other political offices later on. The men filling the boards are rarely ever suited by experience or fitness to judge of sanitary questions. As an example: A health board, in a neighboring municipality to where I reside, refused to concur in recommendations made by a county milk commission for regulating the principal milk supply in the county in spite of the well-known fact that one milk producer alone had nine out of his eighteen cows destroyed by the State Agricultural Department because of the presence of tuberculosis. The excuse advanced by a supervisor of the county and a member of this health board was that the regulations would impose a hardship on a poor man with one cow who was using it as a means of support in bringing up a family.

This self-same board of health is referred to in the monthly bulletin of the New York State Department of Health for August on page 211, as follows: "One board of water commissioners entered complaint against the board of health of a neighboring community which had given permits for drains of a row of houses into a gutter which flows directly into a tributary of the stream from which the water supply is drawn. And the same board included among its list of twenty-five violations, the maintenance of a cesspool near a tributary by the supervisors of the County Jail."

Local county health boards do nothing in sanitary matters except on complaint, founded on facts that can be sworn to if necessary, and made in writing only. This must be investigated by the local health officer. In his inspection he is often informed that the party making the complaint has probably some personal grievance and is taking this means to satisfy resentment.

The health officer may be the family physician of the alleged persecuted party. His report may be biased. The action of the board depending upon the report before them defers action or compromises with one side or the other, according to their personal or political affiliations.

As the Public Health Law is now constituted, its defects and requirements preclude the better class of medical men accepting appointment as health officers in many important localities.

Since I have been engaged in the preparation of this address the September number of the monthly Bulletin of New York State Department of Health appears, with an editorial comment, part of which I wish to incorporate: "Some change in the cumbersome and obsolete method of procedure in local jurisdictions is much needed. An intelligent and capable health officer is often unable to get his board to act when his medical knowledge shows its necessity.

"Every local board of health must have been struck with the indefiniteness of the law governing its powers and duties, and its entire inability to do needed things for the protection of public health, by reason of lack of funds, and the vague provisions of the law, seemingly conferring upon them great power, but failing to specify how it can be used.

"The people of this state are at last fairly awake to the value and necessity of sanitary reforms, and they are demanding both from the Department and from their local boards of health and health officers effective action along many lines."

The remedy lies in making the rural boards of health as efficient as those of larger cities, and the methods and systems there in vogue could well be copied with such modification as local conditions require.

The public are open to receive instruction in medical subjects.

The eagerness with which patent medicine advertisements are read by the masses well demonstrates this fact.

For this reason it is obvious why the president of the American Medical Association warns those who undertake the education of the public in this connection—that we should be careful in our efforts to impart new truths that we should not convey error.

Josh Billings said truly: "You better not know so much than to know so many things that ain't so."

INTERMITTENT CLAUDICATION

*Address Delivered at the Second Meeting of the Third District
Branch of the New York State Medical Society,
held at Troy, N. Y., October 27, 1908.*

By HERMON C. GORDINIER, M. D.

Troy, N. Y.

Ladies and Gentlemen: I take great pleasure in thanking all of you for the honor which you have bestowed in selecting me as your presiding officer at this the second meeting of the Third District Branch of the New York State Medical Society.

The address which I have prepared to present to you on this occasion is upon one of the numerous manifestations of that most common but interesting and important disease, Arterio Sclerosis. I refer to that variety of angio-sclerosis of the extremities known as angina cruris, intermittent lameness, limping or claudication. The clinical manifestations of angio-sclerosis of the vessels of the extremities are very variable and present themselves under five well-defined clinical groups dependent upon the character, the location and exact extent of the pathologic changes in the vessel walls. They are as follows: Intermittent claudication, symmetrical gangrene or Raynaud disease, spontaneous or dry gangrene, erythromelalgia and arterio-sclerotic neuritis, the latter condition being dependent upon pathologic changes in the walls of the vasa-nervorum. Interesting as it would be to describe in detail the clinical manifestations of the various groups above mentioned and to go into their differential diagnosis, it is my purpose to direct your attention only to intermittent claudication, a diseased condition which is not uncommon, is frequently overlooked, and whose clinical manifestations are clearly defined. If we are to judge from the scant references to this condition in our most recent text-books and from the few cases thus far recorded in American and English literature, intermittent claudication is extremely rare. Judging from the only references I can find in English literature the disease has been until very recently completely overlooked in England. But two cases are recorded—one by Byron Bramwell in April, 1907, and the other by Parker Weber in January, 1908.

In America, however, cases have been recorded by Dana,

Flinterman, Gordon, Hunt, Irish, Lovett, Patek, Putnam, Riesman, Talley, Walton and Paul, and J. C. White. I am convinced, however, that from the cases which I have seen during the past few years in private and consultation practice, that intermittent claudication is far more frequent than we are led to believe, but owing to the scant references to it, and the very meager description of it, in our best text-books and systems of medicine, it is perfectly evident that its clinical manifestations are almost unknown to the general practitioner, and hence it is very probable that many cases have been entirely overlooked. It is my opinion that intermittent limping is quite as common as is true angina pectoris.

Our attention was first directed to this symptom complex by the late Professor Charcot who in 1858 described his case and gave to the affection the name of Claudication Intermittente. He had thus early noted the remarkable resemblance between this affection in man and a similar condition observed in horses by veterinarians and called by them Spring or String Halt. Professor Erb of Heidelberg, in 1898, published a most exhaustive and valuable monograph upon this subject and named the condition dysbasia angio-sclerotica intermittens. Since then several important papers on this subject have appeared, more notably those of Higier, Goldflam, Idelsohn, Oppenheim, Walton and Paul, and Ramsay Hunt. Higier designated this affection myasthenia angio-sclerotica and Walton and Paul called it angina cruris.

Etiology.

Intermittent claudication has been observed much more frequent in men than in women. Patek found that of 127 cases taken from the literature, 120 occurred in men and seven in women. Of the ten cases I have observed, eight occurred in men and two in women. Goldflam and Oppenheim emphasize the importance of the neurotic temperament as a condition favoring its production. I have observed one typical case in a very neurotic woman thirty-five years of age who had no objective vascular or cardiac disease. The disease is, however, most often met after middle life, at a time when vascular changes are most commonly observed. Hence all causes which favor the production of such changes, such as the infectious diseases, alcohol, syphilis, diabetes mellitus, gout; lead, tobacco

and exposure to cold and wet, may also be productive of this disease. Erb, from a very wide experience with this affection, lays particular stress upon the excessive use of tobacco and exposure to cold in its production. Mechanical compression of the iliacs or femorals by a truss, aneurism or other tumors is said to have produced this disease. Idelsohn found flat foot present in ten of his twenty-two cases and believes that there is more than a casual relation between flat foot and intermittent claudication. In three of the cases which I have observed flat foot has been associated with well-marked intermittent limping.

Pathology.

Our knowledge of the pathology of intermittent claudication is based upon the study of the autopsies of Charcot, Elzholtz, Magrez and Erb, together with the arterial changes observed in the amputated limbs removed from cases suffering with this affection. Charcot, from a study of his cases, believed that the symptoms were due to arterial changes localized to the proximal trunks, such as the abdominal aorta, iliacs and femoral arteries, while Erb, on the other hand, holds that the symptoms are dependent upon changes in the distal arteries of the extremities. The most constant change found in these cases was an obliterative arteritis of the vessels of the extremities which results in a gradual narrowing of the lumen of the vessels with a consequent ischemia of the parts beyond. In a later stage, as the calibre of the vessels become narrower and the nutrition of the muscles and nerves suffer, muscular atrophy and arterio-sclerotic neuritis may come on. Lastly, spontaneous or dry gangrene often occurs as a late event which may necessitate amputation and is often a forerunner of death.

Symptomatology.

There are five clinical characteristics which stamp intermittent claudication as a perfectly distinct clinical entity and which also serve to make the diagnosis of it very clear.

They are in the order of their import as follows:

First. The intermittent character of the symptoms.

Second. The absence of the symptoms while the limbs are at rest.

Third. The development of painful limping on exertion.

Fourth. The disappearance of all symptoms after a period of rest, to be repeated again on exertion; and,

Fifth. The absence in most cases, especially during the attack, of pulsation of the posterior tibial and dorsalis pedis arteries.

Altogether the most striking and interesting feature of this affection is the intermittent character of all the symptoms. The patient while at rest is perfectly comfortable, and is able to move his limbs freely and in a natural manner. He experiences no paresthesia, heaviness, pain or cramp in the limbs and they do not feel weak. On attempting to walk any distance, however, say a few blocks, or especially if he attempts to climb a hill or walk rapidly up stairs, he notices the appearance of numbness, tingling and weakness in his limbs to be followed quickly by heaviness, great pain, cramps, stiffness and a disordered, limping gait; all of which symptoms increase as he attempts to proceed when his limbs feel as if they were becoming rigidly fixed, and if he attempts to go on further, they feel as if they would become paralyzed and he would fall to the ground in a heap "abasia." Hence he is enforced to rest either in the sitting or recumbent posture for a brief period, perhaps a half-hour or more, when all the above-described symptoms gradually disappear and he again feels perfectly well and is able to go on. If, however, he attempts to walk again at his usual rate of speed and continues far enough, all the symptoms recur, but with greater severity.

The objective symptoms during the attacks, while somewhat variable, are quite characteristic. The limbs usually feel cold, are often cyanotic and swollen or white or ashen. Sometimes they are red and deeply congested, and the patient complains during the attack of a burning pain in them. If the arteries of the feet are palpated, they either do not pulsate or pulsate very feebly. In a few instances no changes in the pulsation of the arteries of the feet were observed. Bramwell has recently reported such a case and in one of my patients afflicted with this disease no palpable change could be observed in them.

Intermittent claudication is most often observed in both lower limbs, although it may only be confined to but one. This symptom complex, however, is not necessarily confined to the lower extremities. Several observers have recorded cases of a similar character involving one or both arms, with changes in the vessels of the wrist exactly like those observed in the feet. I have ob-

served two such cases, one involving the left arm and one recently seen in consultation with Dr. Irish, who has kindly permitted me to record it, involving the right upper extremity. In both of these cases one could feel but very feeble pulsations in the vessels of the wrist.

Vascular changes with intermittent symptoms identical in nature to those of intermittent claudication have been observed in the brain, retina, kidneys and intestines. Doubtless, all of you are familiar with the sudden but evanescent symptoms associated with cerebral arterio-sclerosis, probably induced by spasm of the blood vessels of the brain, similar in every respect to intermittent claudication, such as temporary blindness, unilateral, bilateral or hemiopic in effect; aphasia, monoplegia or hemiplegia, and partial or complete unilateral sensory defects. And lastly it is very probable that true angina pectoris is a disease which is in every respect similar to angina cruris.

The symptoms of intermittent claudication are due to the sudden but intermittent withdrawal of blood from the tissues of the affected limbs during activity, the result of a sudden narrowing of the calibre of the blood vessels (from vaso-motor spasm) beyond that which is normal to the parts while at rest. It is perfectly evident that in this condition during rest the blood supply, though feeble, is ample for the requirements of the tissues; but during activity, however, owing to the increased metabolic changes occurring in the tissues, especially the muscles, the blood supply being further diminished by sudden vascular spasm, is insufficient for the extra demands put upon the tissues, and hence are induced the symptoms, weakness, numbness, pain, spasm and limping, which are so characteristic of this disease.

"Ramsay Hunt well expresses it when he states that there are three factors in the production of this disease. *First*, one constant and organic in nature angio-sclerosis, narrowing the calibre of the blood vessels; and two factors functional and inconstant; the tendency to vaso-motor spasm and the increased demand put upon the circulation during activity."

Diagnosis.

The diagnosis of intermittent claudication will in most instances be perfectly simple if one will bear in mind the five cardinal points so characteristic of this disease and mentioned in detail under the head of Symptomatology, namely, the inter-

mittency of all the symptoms, the absence of the symptoms while the limbs are at rest, the development of numbness, cramp, weakness and painful limping on exertion; the disappearance of the symptoms after a brief period of enforced rest and the absence of or enfeeblement of the pulse in the dorsalis pedis and posterior tibial arteries.

Prognosis.

Owing to the organic factor "angio-sclerosis" in the production of most cases of this disease the prognosis is unfavorable. Many of the cases improve, however, under appropriate treatment and a few of the early neurotic cases without objective arterial changes get well, or are so far restored that they are able to walk in a normal manner. This has been the result in the case of mine referred to under the head of Etiology of a Jewess, thirty-five years of age, without objective arterial changes, but with the characteristic intermittent limping and other associated symptoms, who has so far improved that she can walk perfectly for a mile or two without the slightest discomfort or occurrence of any of the symptoms of this disease. I may state that she was seen during the height of her disease by Dr. Putnam of Boston, who concurred in the correctness of the diagnosis.

Treatment.

The treatment of this condition may be summed up as follows:

Restriction of exercise.—Short of bringing on the attack, or absolute rest in bed; saline baths, gentle massage and electricity, particularly the D'Arsnoval current, which relieves pain and produces vaso-motor dilatation; vaso-motor dilators, especially nitroglycerine and sodium nitrite, together with small doses of potassium or sodium iodide, and general tonics, particularly the glycerophosphates, arsenic and strychnia. Tobacco and alcoholic stimulants should be prohibited. The condition of flat foot should be carefully corrected. If a syphilitic infection is suspected a systematic and thorough course of mercury and the iodides should be given.

ADDRESS

*To the Graduating Class of the Henry W. Bishop, 3rd, Memorial School,
at Pittsfield, Mass., Sept. 3, 1908.*

By SPENCER L. DAWES, M. D.

*Adjunct Professor of Materia Medica, Albany Medical College;
Instructor in Microscopy and Pharmacognosy, Albany College of Pharmacy*

Before commencing this address, I wish to thank the managers of the Bishop Memorial School, the officers and directors of the Mercy Hospital, as well as those responsible for my being here to-night, for the opportunity of speaking in my father's native state; in a section of the country which I have learned to love so well; and in the city which honored, and was honored by, my uncle, Henry L. Dawes.

Custom is a curious thing; it ordains that in one part of the world men shall shave their heads, while in another their hair shall be long; it provides that in some countries the women's faces shall be hidden, and in others that they may be seen; bathing each day is scarcely enough for some peoples, while to bathe more often than once a month is a sin for others; to grasp the hand and kiss the lips is deemed proper in one part of the world, while to rub noses is the most cordial greeting in another; custom directs that, in some places the men, as a rule, shall wear the trousers and the women the skirts, but in others allows the opposite to prevail: And so, for years, custom has commanded that when a class of young women have completed their course of studies in nursing, have at last reached the point in their lives toward which they have looked with eager eyes for so long, they shall be restrained a little longer to hear words of advice and caution from some tiresome, elderly person, usually a physician; and therefore to-day, we victims to custom meet in a common cause.

I do not pretend to say why the trouser-wearing woman is approved in one country and fails to get applause in another, nor why any of the other customs should obtain, but I do know why the doctor is selected to preach to you, and why he should not be too young—not, as you might suppose, because he is so wise, so profound, or so learned, but because he is experienced; because he has made the same mistakes that, I fear, some of you will make. He, too, started out with the firm conviction that

the world was his for the asking; that it was simply a question of time when his worth would be estimated at its true value, and he would be honored as he really deserved, and not held in restraint by the old fogies whom circumstances had given control over him for so long a time; that at last he was free to do as *he* wished and that no longer would he be held in check by the idiotic caution, the foolish timidity, and the incomprehensible deliberation of the ones who, for some unexplainable reason, were still allowed to direct the way of the rising and far more progressive generation; he, too, felt that he was unappreciated, and he had never heard, or had never fully understood that quotation from Pope:

"A little learning is a dangerous thing;
Drink deep, or taste not the Pierian spring:
There shallow draughts intoxicate the brain,
And drinking deeply sobers us again."

And now that I have qualified myself in your estimation, young ladies, let us swallow our disagreeable but necessary dose as quickly and with as little fuss as possible.

If any of you undertook the art, the vocation, the profession, or whatever we may choose to call it, of nursing with the idea that it is an easy life, that fallacy we may be quite sure is long since dispelled; if any one of you has been led to believe that your chosen calling is not a life of toil, of constant sacrifice, of bitter disappointment, of mortification, and of frequent humiliation, let me correct that mistake at once, for all that may, and very likely will, be yours.

Many a nurse fails because she is impatient of authority and does not follow with sufficient care and attention the orders given her. So rare is the occasion on which she would be justified in disobeying or changing an order that it is possible to lay down the following rule: "No order may be changed, altered, modified, or disregarded without the permission of the one in charge." It may, and I am quite of the opinion that it will, occur to you on more than one occasion—and very likely with apparent good reason, too—that you can alter the treatment with benefit to the patient; but do not do it, for you are not a physician; you are learned neither in therapeutics, diagnosis, or prognosis; you are simply an instrument in the doctor's hands—of help or hindrance, just as you heed or slight your orders.

A very common failing is gossiping with your friends, or your patients, or your favorite doctor, about other patients or other doctors. There is nothing that will sooner ruin the reputation of a nurse than to have it said, "She talks too much." Remember that "Speech is the instrument by which a fool is distinguished from a philosopher." If you tell Mrs. A. how very sick Mrs. B. was when you attended her, how skillful your care was, and how difficult she was to get along with—no matter how innocent your tale may be—Mrs. A. will reason, and very properly, that you will describe *her* case to Mrs. C. If, when you are taking care of a patient for Dr. Jones, you sing the praises of that paragon of doctors, Dr. Brown, you will very quickly find that Dr. Jones gives you no more calls, and Dr. Brown will not thank you for what you have said of him.

If I were asked what quality is most needed in a nurse to make her successful, I would answer that just as "Cleanliness is next to Godliness," so is tact next to honesty. You may be skillful, learned, strong, faithful, true, patient and persevering; yet, if you have not tact, I do not want you for a nurse. You may not be tactful by nature, but if you wish you can, by constant endeavor, acquire that attribute, and with all the force at my command, I charge you to cultivate, to nurse, and to foster whatever of tact, be it much or little, it has pleased God to give you.

For some of you, the hardest lesson that you will have to learn will be to keep your tempers, for there is hardly an hour in a nurse's life when some trial to her temper does not arise: The doctor criticises you in the presence of the patient, when you have tried your very best; the patient is cross and querulous and finds fault with all you do; you are made to lose your sleep without good reason; your meals are cold; you are blamed for things you have not done; you are slighted and snubbed and treated without consideration; you are subjected to the whims of a patient who may be less ill than you are, and yet, hard as it seems, you must preserve your balance, you must not lose your temper,—but if you *should* lose it, and I say this most feelingly, and with great emphasis, for no one is better versed in tempers than I am, be very sure to lose it in a place where no one can ever find it but you yourself.

A very common cause for complaint about nurses is that they upset domestic arrangements, either through a false idea of their

own importance or a lack of consideration for others. They feel, and quite properly, by-the-way, that they are "just as good" as their employer, and also—quite as improperly, let me add—that they are a little better than the servants, the consequence being that they are like a cinder between the eyelid and the eye—a constant source of irritation, only endured until they can be cast out. But for this unhappy tendency the trained nurse would be much more in demand than she now is. Within a few hours of this writing a woman said to me, after having discharged a very capable trained nurse, "Thank goodness, I'm rid of her. The one before her did nothing but make the servants run and wait upon her, demanding all kinds of unnecessary things, and this one divided her time between visiting with the cook and inspecting the contents of the refrigerator to see if there was anything there she liked. May I never have to employ another!" Remember that while, theoretically, you *are* "just as good as anybody," you are, in fact, not one whit better than your actions show you to be, and that your chief asset is your popularity.

Unfortunately, the American voice is usually pitched on a high, and not always musical, key. If you have ever been ill and forced to listen, day after day, to a rasping, piercing voice, I am sure you will agree with me that one of the first duties of a nurse is to acquire, if she does not already possess it, that "most excellent thing in a woman," a low, sweet voice. But do not whisper in the sick room, for of all abominable, annoying and irritating things, this is the very worst I know of.

However frightened you may be; however much you may be disturbed at your patient's condition; however much you may be alarmed by some sudden change, preserve at least an outward appearance of calmness, not letting your patient for an instant suspect that you are in the least upset, for that may be his undoing as well as yours. Calmness of demeanor and an unruffled serenity have often more to do with a patient's recovery than powders, pills and potions. Always seem happy and contented even if you are not, and never tell your patient or his family your own troubles or personal grievances. He is not interested in them and does not want to hear them; in fact, he would much rather talk about—what you should *just* as much avoid—his own aches and pains.

Personal appearance is a factor which should not be overlooked. See that your dress is neat, clean, and wellfitting, and

that you look as attractive and pretty as you possibly can, for that will not only make you much better satisfied with yourself but will do much to make you popular with your patient, particularly if the patient happens to be a man.

Think over very carefully and define very accurately in your own mind what your "rights" are, and then, *never insist upon them*. When you yield them, as you will often be compelled to do, yield them gracefully, not in a sullen and reluctant manner; yet, at the same time, you can let it be very clearly understood that you have given up something that was your just due, for there is no one who is absolutely independent in fact, and the one who stands apart and says, "I will" and "I won't," "You shall" and "You shan't," "This is mine and I will have it," will soon be poor in friends and rich in enemies; will be a nurse of last resort and not of first selection.

Do not join that class of nurses, which unfortunately is a rapidly growing one, who when asked to take a case first inquires, "What kind of a case is it?" and then says, "Oh, no; that is not in my line," or "I never take contagious diseases," or "I don't care for obstetrics." What would be thought of the average physician if he made such response; if he said, "This case I like and I will take it; but that does not suit me; it may give me trouble, and I will have none of it?"

While you should be, and most nurses are, charitable, don't work for nothing; don't give your energy, your best endeavor, your life, to the people (and I am sorry to say that there are many of them) who are well able to pay you your pittance—for that is what it really is—and who ask you to serve them at a reduced price. "The laborer is worthy of his hire," and at the best your pay is small, your hours are long, and your work is hard.

Never tell your patient anything but the truth. If you can't tell him that, tell him nothing. I well remember, as I look back over more than a score of years of active practice, of my dear father—a far wiser man and better doctor than I can ever hope to be—telling me what I, in the bumptiousness of youth, was much amused to hear, but what experience has taught me was the height of wisdom. He said to me, as I have said to you, "Tell your patients nothing but the truth," and he also said, "Never promise your patient that he will have recovered by a certain day; that he will surely recover; that he will be

free from pain; in fact, *promise* him nothing; but tell him that you hope, you believe, you trust, that he may have his desire; for, if you tell him an untruth he will surely find it out, and if you make him a promise the chances are that it will not come to pass, and he will lose all faith either in your judgment or in your integrity, or in both."

I fear that my more or less disagreeable description of the nurse's possible shortcomings may give you the impression that I belong to that class of misguided individuals who look upon you as a necessary evil rather than as the very actual blessing which you should be, and usually are. But, if so, your impression is wrong; my criticisms were called forth by conditions which have actually confronted me, and were given to you, not because you were likely to fall into similar errors, but to aid you in avoiding them.

Robert Louis Stevenson wrote, in his Preface to "Underwoods: "

"There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race."

So high is my opinion of your profession, of your womanly virtues, of your superior skill and adaptability, that I would, though with all humility, suggest, without in any way reflecting upon the many noble men in my own profession, and, too, without admitting that they are so much better than other men, that Stevenson might, with great propriety and perfect honesty, have used the word "nurse" instead of "physician."

We, as practitioners of medicine, must freely acknowledge that many times the favorable termination of a case which has meant so much to the doctor, for which he has received so much praise, could never have occurred without the services of some faithful, unselfish woman, who has modestly stood in the background while he has occupied the center of the stage, in the full glare of the footlights.

In the ancient city of Beauvais, not many hours' journey from Paris, there stands a building in which for many years has been

manufactured the famous tapestry known all over the world among the lovers of the beautiful as the "Beauvais tapestry." If you were fortunate enough to visit this building, maintained by a beneficent government, you would be conducted first to the rooms in which are working the apprentices on simple tasks—youths of about twelve years and upwards—who sit at their looms in well-lighted, clean, and cheerful studios, where, if they work faithfully for twelve years, they will have learned their trade and become full-fledged workmen. As you pass on to other rooms you find, ranged along in regular order at their work, young men, men of middle age, and elderly men, all hard at work at their allotted tasks, weaving in and out with their ivory shuttles the many-hued threads of silk and linen inter-twined. If you look closely you will see that behind and above each workman is a painted picture, a pattern of what he is to make, but when you turn to his work you see but a confused jumble of knots and strings, ragged and rough, ugly and unattractive, and with but a faint semblance of the beautiful example which the man is supposed to be copying, for it is only the back of his work that he or you can see. On and on flies the shuttle; in and out go the threads, the coarser linen giving strength and body, the silk lending softness and beauty to the finished product which may be so simple that a few months' work sees its completion, or so intricate that twenty years or more are scarce enough. From early morn till dewy eve the shuttle flies, the pattern gaining, as it seems, only in bulk but never in beauty, until at last the appointed task is done, and the tired workman lays his shuttle down and with a sigh of relief reverses his frame, when, lo! the impossible seems to have been accomplished; instead of the confused, blurred mixture of color; instead of the ugly mass of knotted strings and tangled cord without seeming form or definite plan, there is revealed in all its beauty the marvelous silken picture—it may be one of golden roses and delicately tinted flowers in pinks and shades of wondrous green; it may be one of knights on prancing steeds, and ladies dressed in gorgeous robes; or, it may be done in graver tones of brown, some sylvan scene, or some holy monk kneeling in his cell of stone. But, whatever it is, whether the scene be grave or gay, bright-hued or dull, if the artist has been true to his example, if he has chosen his colors well and has woven faithfully the pattern given him, it is a thing of beauty which

will live for years after the workman who has made it has gone to his last resting-place, and will gladden the eyes and uplift the hearts of all who see it.

And so, it seems to me, it is with you and your work. Like the apprentices, you have served your time at learning how to weave your life's picture, and now you are starting out with your white uniform—your shuttle of ivory—with a firm determination to live up to your ideal. The pattern which is set you, the painted picture which you are to copy, may be one of gorgeous color and you may weave with bright and beautiful silks; your lines may be cast in pleasant places and your tasks be so smooth and easy that you never tire, never notice the swift, flying hours; nor, till the frame is turned, until you lay your shuttle down, do you realize that you have failed to be true to your ideal above and behind you; not until then do you understand that failure is yours, and that an imperfect picture, your own handiwork, must always last, for now it is too late; it can never be changed. On the other hand, you may work with colors dark, with sombre shades, plodding on through sleepless nights and weary days, helping the poor, cheering the afflicted, smoothing the bed of death, and with your God-given mother-love teaching the ones in pain to bear it bravely. Your fingers may push the shuttle but slowly, though surely and truly; the back of your picture, as you look at your ideal, may appall you and may seem to have no likeness to what you started out to do; like the tapestry of which I told you, it is ragged and rough, and you view it with dismay, but still your shuttle goes in and out, and still your weary fingers weave with the linen thread of duty and the silken thread of love, until the task is done and the Master snips the thread. You almost fear to turn the frame, yet when you do, what tumult fills your breast, what pride is yours—you *have* followed the pattern; you *have* lived up to your ideal! It is true, perhaps, that the picture is not quite the same, not exactly what you meant it to be; but that dark thread that stands out so strong, which when you used it you hated so, serves only by contrast to show the beauty of the lighter silken cord, and it all resolves itself into one beautiful and harmonious whole.

If you have a high ideal, if you are imbued with that one wonderful thing, that marvelous, God-given gift, of which no man should ever speak unless his tones be hushed, that divine

and holy thing which places woman upon a plane which no man can ever reach, which, if she has it, makes a good nurse, and without which no nurse is ever good—MOTHER-LOVE—you will succeed, your tapestry will be beautiful, living after you, a shining light for all who follow.

In closing, I feel that I can give you no better advice, no wiser counsel, than that contained in the beautiful words written by the then youthful, and later great, American poet, who was born and lived almost within the sound of my voice, when he said:

“So live, that when thy summons comes to join,
The innumerable caravan which moves
To that mysterious realm where each shall take
His chamber in the silent halls of death,
Thou go not, like the quarry-slave at night,
Scourged to his dungeon, but sustained and soothed
By an unfaltering trust, approach thy grave
Like one that wraps the drapery of his couch
About him, and lies down to pleasant dreams.”

POLIOMYELITIS ANTERIOR ACUTA WITH EXHIBITION OF CASE

Read at the Second Annual Meeting of the Third District Branch, Medical Society of the State of New York, held in Troy, October 27, 1908.

By LA SALLE ARCHAMBAULT, M. D.

Lecturer on Neurology, Albany Medical College, Albany, N. Y.

REMARKS ON THE SURGICAL TREATMENT,

By W. G. MacDONALD, M. D.

Professor of Abdominal and Clinical Surgery, Albany Medical College, Albany, N. Y.

Last year I had the honor of presenting to this Society in Albany the case of a man forty years of age, who, as the result of an unusually virulent attack of acute anterior poliomyelitis, exhibited a widespread atrophic paralysis which involved almost the entire skeletal musculature, save that of the face and neck. To-day, I have the good fortune of submitting to your observation an instance of the same disease in the child, in which the salient feature is a minimum disability, and which, therefore, offers a striking contrast with the maximum involvement observed in last year's case. We have thus in two consecutive

séances the two extremes of severity in the clinical manifestations of one and the same anatomic substratum.

The history of the case is as follows:

M. C., age 10, school girl.

Infancy undisturbed. The child never had convulsions. Dentition occurred normally. No retardation in the development of speech. The child began to walk at fifteen months. When the child was about eighteen months old, it was noticed one morning that she had lost the use of the right arm. The appearance of this paralysis had been associated with such slight constitutional disturbance that the physician incriminated traumatism, a fall of some kind, in order to explain the disability, and told the mother that the condition would clear up in a short time.

Close questioning, however, reveals the fact that previous to the onset of this paralysis, the child had been feverish for a few days and gave other indications of ill-health. Nevertheless, there were no convulsions, no vomiting, diarrhoea, nor any other of the symptoms so commonly observed in the initial stage of poliomyelitis anterior acuta. A point of some significance, however, in establishing a retrospective diagnosis of the etiology of the actual paralysis, is the fact that the child, who had already learned to walk fairly well, became so awkward and unsteady on her feet that she had to be wheeled around for a period of two weeks. She thereafter regained fully the use of her lower limbs.

The true condition of her arm does not seem to have been recognized, as the diagnosis proffered was simply that of dislocation of the shoulder. Of late, electrical treatment has been resorted to, but evidently without any knowledge of the cause of her subluxation.

Actually, we observe a motor disability limited to the right upper extremity and practically confined to the deltoid muscle.

As regards voluntary motion: the various movements of the hand and fingers are intact; flexion and extension of the forearm on the arm, pronation and supination of the forearm and hand are executed normally; the movements necessary to carry the hand over to the opposite shoulder, to join the hands behind the back, to elevate the shoulder as in the act of shrugging are all preserved; but the child is unable to draw the arm away from the side of the chest, to elevate and abduct it so as to bring it at right angles with the trunk, or to raise the arm as a whole above the head. The deltoid is totally disabled and when the arm is brought at right angles with the trunk and then allowed to go unsupported, it falls as an inert mass to the side of the chest.

A certain resistance is offered to passive flexion and extension of the forearm on the arm, but both are fairly easily overcome, flexion however much more readily than extension which is maintained with relative force.

Electrical examination. With the faradic current, a vigorous contraction is observed in the right trapezius muscle. The response is likewise excellent in the infraspinatus, the teres minor and the latissimus dorsi. It is distinct though less marked in the pectoralis major. The triceps brachialis, the pronators and supinators of the forearm and hand, the

long and short flexors and extensors of the hand and fingers all exhibit a perfectly normal reaction. The deltoid yields absolutely no response to either faradic or galvanic stimulation even when a very strong current is employed. Stimulation of the biceps cause no contraction, no flexion, therefore, of the forearm; when the current is slightly increased extension of the forearm is observed due to transmitted stimulation of the triceps.

The radial and tricipital reflexes are both distinctly obtainable on the side of the paralysis as well as on the healthy side.

There are no disturbances whatever of either subjective or objective sensibility.

Aside from muscular atrophy, trophic and vasomotor disturbances are entirely wanting.

The question of diagnosis can hardly offer any great difficulty. The atrophic paralysis of the deltoid and the associated paresis of the biceps can only be explained by a focal lesion of the spinal cord. The distribution of this paralysis is distinctly radicular in type and corresponds mathematically to a lesion of the fifth, sixth and seventh cervical segments. The only other process which could be incriminated would be a lesion of the primary cords of the brachial plexus. In that case, there would necessarily be involvement of the posterior cord in order to explain the paralysis of the deltoid which is supplied by the circumflex nerve, and of the outer cord to account for the paresis of the biceps which is innervated by the musculo-cutaneous nerve; but, of course, if both these cords were truly the seat of lesion, their remaining branches, the musculo-spiral and the median, for instance, would not have escaped.

It must be said, moreover, that the history of the case, though necessarily imperfect, is pathognomonic of the clinical evolution of a poliomyelitic process. A suddenly appearing massive disability with subsequent limitation to one or two muscular groups is in itself quite sufficient to justify the diagnosis of acute anterior poliomyelitis.

As regards the subluxation of the shoulder, it is to be explained on a purely anatomic basis. We know that the capsular ligament of the shoulder joint is an extremely loose structure and that the head of the humerus falls fully one inch from the glenoid cavity when the surrounding muscles (the supraspinatus above, the long head of the triceps below; the tendons of the infraspinatus and teres minor posteriorly and the tendon of the subscapularis anteriorly) are dissected away from the capsular ligament which they reenforce. The movements of the joint are

not regulated by the capsule so much as by the surrounding muscles, which owing to their intimate connection with the capsule, are converted into elastic and spontaneously acting ligaments. The deltoid is placed most externally and covers the articulation on its outer side as well as in front and behind. In virtue of its origin from the outer third of the clavicle, the acromion process and spine of the scapula, and of its insertion into the middle of the outer surface of the shaft of the humerus, it is admirably suited to protect the joint and to help maintain the articular surfaces in apposition.

It is not surprising, therefore, that the complete atrophy of the deltoid and the loss of innervation of the articular structures should be followed by subluxation of the shoulder.

The main interest of this case resides in the minimum extent of disability. Naturally, we are assisting at the cicatricial stage of the disease; we are confronted with the ultimate effects of a long-healed inflammatory process and cannot, therefore, speak with certainty of the original proportions of this paralysis. Nevertheless, it is universally admitted that, *ceteris paribus*, the more widespread the original involvement the more extensive the residual disability, and vice versa. We may therefore assume that in this case the initial paralysis must have been fairly limited. It is even remarkable that a lesion which has determined such a complete atrophy of the deltoid should have left all the neighboring muscles in a state of relatively perfect functional adequacy.

Cases of this kind, I believe, are rare. Although I have not exhausted all sources of information I have not found thus far any analogous instance in the literature. The only case I have seen which could compare with this one, I saw at Oppenheim's Clinic in Berlin in 1904. Aside from the deltoid, the biceps and triceps were both decidedly atrophied; all the other muscles exhibited normal electrical reaction. This same observer refers in his text-book to a case in which the disability was practically confined to the domain of the tibialis posticus and in which complete restoration of function took place.

The treatment of this case from the standpoint of medical therapy is practically nil. We have seen that the deltoid responds to neither faradic nor galvanic stimulation, showing that the muscle-substance has been entirely replaced by scar tissue and that no amount of electrical treatment will ever accomplish

anything in the way of restoring the lost function of the shoulder-joint. It is therefore with a frank admission of our own resourcelessness that we turn to surgery for helpful suggestions.

DISCUSSION

Dr. WILLIS G. MACDONALD: The study of the distribution and degree of paralysis in myelitis of the anterior horns of the spinal cord is of great interest alike to the neurologist and the surgeon. The case so excellently reported by Dr. Archambault presents many unusual features. The extent of muscular involvement is extraordinarily small, chiefly one muscle, the deltoid, but the degree of loss of function is complete. Again, the true nature of the disease was not recognized until all hope of successful medical treatment had passed. The stage of deformity is now complete with atrophy of muscle, relaxation of ligaments and subluxation of shoulder-joint. The deltoid muscle no longer responds to electrical stimulation.

Manifestly, the usual plan of treatment by massage, electricity, exercises and tonics can be of no assistance in this case, because of the advanced tissue-changes. In recent years, surgery has gone further than simple tenotomies in infantile paralysis. It has undertaken joint fixations and partial resections, tendon and muscle transplantations and nerve grafting for the relief of the accompanying deformities. All of the operations have proven useful under different conditions.

What can be done in this case? First of all, the capsular ligament of the shoulder-joint may be resected so that the partial dislocation becomes relieved; second, a careful study of functions of the muscles about the shoulder shows that a portion turned down from the trapezius in the neck and another portion from the pectoralis major turned outward from the chest, together can be made to substitute for the deltoid in function. The formation of this new muscle will require great care in preserving the normal vascular and nervous connections. Both operations may be completed at a single sitting.

A little reflection will show that nerve grafting at this time would be absolutely fruitless. There are, moreover, no satisfactory tendons accessible.

Clinical and Pathological Notes

An Interesting Case of Gun Shot Wound. By GEORGE LENZ, M. D., Gloversville, N. Y.

August 31, 1907, while sitting at a table in her cousin's home, Miss L. O., aged twelve, of Wells, Hamilton county, was accidentally shot with a 22-short rifle.

Dr. Clark of Wells was called to attend her and found that the bullet had entered at the lower border of the right scapula. There was some tenderness over the right side and also over the lower dorsal and upper lumbar regions of the spine. Immediately after her injury she was unable to walk and when the doctor arrived he found the right leg absolutely paralyzed and her left leg in a spastic condition. She was treated at home for five weeks and was then referred to me at the Nathan Littauer Hospital.

I made a careful study of the case and found the following conditions present: A small scar at the point of the right scapula where the bullet had entered; slight tenderness over the upper lumbar and lower dorsal regions; knee jerk, right leg, absent; knee jerk, left leg, exaggerated; alkleklonis, right leg, none; alkleklonis, left leg, greatly exaggerated. Sensations of heat, cold, pain, and touch all present; bladder and rectal reflexes, normal.

From a study of the above symptoms and from the history of the case given by Dr. Clark, I decided that the bullet must have passed through or lodged in the cord on the right side, destroying some of the nerve-cells, thus producing the paralyzed condition of the right leg, and also in its passage producing a hemorrhage or inflammatory exudate in the cord sufficient to irritate but not destroy the function of the cells in the left anterior horn, thus producing the spastic condition of the left leg.

The absence of any abdominal symptoms, as hematuria, or blood in vomitus or stools, or any tenderness in abdomen, led me to believe that the bullet was lodged in the vertebra and had not entered the abdomen.

The anterior cural nerve springs from the second, third and fourth lumbar nerves. This nerve supplies the quadriceps extensor muscle and as the patellar reflex is produced by an irritation of this tendon a loss of this reflex with the other group

of symptoms in this case would point to the injury being in the region of the second, third or fourth lumbar vertebra.

Having thus approximately located the seat of the injury in the cord, I decided that a laminectomy was justifiable if only to relieve the tension producing the spastic condition of the left leg, being skeptical as to the possibility of finding the bullet.

On October 12, 1907, assisted by Drs. Garnsey, Beach and Beard, I did a laminectomy, making the incision from the second to the fifth lumbar spines and removed the laminae of third and fourth lumbar vertebra with a rongeur forceps. The cord was exposed and with a flat probe I explored along the cord and found no obstruction downward nor upward on left side; but on the right side, about one inch above the opening, the probe met an obstruction which I believed would prove to be the seat of the injury. I then removed the spine and laminae of second lumbar vertebra and in the scales of bone as I neared the cord on the right side were small flakes of lead and this was proof of the bullet.

The bullet was successfully removed and its location was found to be near the anterior portion of the cord protruding with the inner layer of bone about three-eighths inch into the substance of the cord. The wound was closed with deep and superficial sutures and a gum tissue drain left in for twenty-four hours to drain excess of venous oozing and healing was normal.

The recovery of the limbs was very interesting to me.

The spastic condition of the left leg began to abate almost as soon as the pressure was relieved and in two weeks was absolutely normal. At the end of the first week I began to see signs of motion in the toes of the right foot; and motion increased and progressed until at the end of four weeks she could to some extent move her ankle and knee; and after ten weeks she could hold the weight of her entire leg several inches above the bed on which she was lying.

By this time, she had begun to walk with aid of crutches. As strength came to left leg she abandoned one crutch.

During this time she was receiving electricity, massage, and hypodermics of one-sixtieth of a grain of strychnine into muscle. All of these measures aided, but on account of certain of the trophic cells being destroyed, she was left with a contraction of ham-string muscles, to relieve which I did a tenotomy lengthening the tendons an inch and one half in January, 1908.

The present condition is quite satisfactory. The left leg is as strong as before her unfortunate accident; her right leg is somewhat flexed and weakened to a slight extent. She can walk a short distance, unaided by either cane or attendant, but relies on a crutch when she walks any considerable distance.

The case has been one of unusual interest to me from these standpoints:

1st. Recovery of the patient from helpless invalidism to a condition of comparative health.

2d. From the fact that from a study of the symptoms present before the operation we were able to locate the bullet as to the region of the cord and also the damage done to the cord, as was proved at the operation; and,

3d. From the gradual and almost complete recovery after the pressure in the cord was removed.

Little Biographies and the Eponymic Diseases

XXXIII. THOMAS HODGKIN

England, 1798-1866

THOMAS HODGKIN was born at Tottenham, England, August 17, 1798. His father, John Hodgkin (1766-1845), was a noted private tutor, and it was from him that Thomas received his preliminary education. He studied medicine at Guy's Hospital, London, and later in Paris, and finally received his degree of Doctor of Medicine at Edinburgh in 1823. His graduation thesis was "De Absorbendi Functione." In 1825 he started practice in London. He worked at Guy's Hospital, being especially interested in pathology and internal medicine. A few months after beginning practice he was made a licentiate of the College of Physicians, and in the same year was appointed pathologist and curator of the museum. He greatly improved the college museum by the addition of a large number of pathological and anatomical specimens. As pathologist to the college he gave each year to the students a series of lectures on that subject.

In 1828 he published "An Essay on Medical Education," in 1829 a "Catalogue of the Anatomical Museum of Guy's Hospital," and in 1832 a paper, entitled "Hints Relative to the Cholera in London." In the "Transactions" of the Royal Medical and Chirurgical Society for 1832 he reported a number of cases of "Contemporaneous Enlargement of the Spleen and the Lymphatic Glands," but he did not clearly distinguish the several pathological conditions from one another. In 1836 Hodgkin's "Lectures on the Morbid Anatomy of the Serous and Mucous Membranes" was published in two volumes, and it was this work which greatly helped to establish his reputation as a member of the far-famed school of pathological anatomists associated with Guy's Hospital.

In 1837, when the senate of the University of London was founded, he was elected a member and served faithfully until his death. He was one of the founders of the Aborigines' Protection Society in 1838. From time to time he was a candidate, but was never elected physician to Guy's Hospital.

Hodgkin never attained a large private practice, but preferred to lecture, to observe and study cases in the hospital wards, and to collect specimens for the museum. He was noted, however, for his generosity to his patients, and he was exceedingly careless in regard to his fees.

As he grew older, Hodgkin gradually fell out of active medical practice, and gave the greater part of his time and energy during the latter years of his life to various forms of philanthropic work. He struggled hard to relieve the ill-housed poor and the persecuted Jews. His home was frequently the scene of simple hospitality to philanthropists and geographers. Sir James Clark and other friends in 1857 wished to present him with a valuable testimonial, but he refused and insisted that all the money be turned over to a charity. In 1866 he visited Palestine with Sir Moses Montifiore, and while there died at Jaffa on April 5, 1866, of an "aggravated dysenteric attack." He was buried at Jaffa and Sir Moses Montifiore erected a monument over his grave.

Dr. Samuel Wilks in 1865 pointed out (Guy's Hospital Reports for that year) that four of the specimens, described by Hodgkin in his paper which appeared in 1832 on "Contemporaneous Enlargement of the Spleen and the Lymphatic Glands," were a species of disease which he (Wilks) had himself discov-

ered, and had not been recognized by Hodgkin. With the generous desire of perpetuating the fame of his predecessor in office as a teacher of pathology at Guy's Hospital, Wilks gave to the condition the name of "Hodgkin's Disease."

TIFFANY LAWYER.

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Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF HEALTH—ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS FOR OCTOBER, 1908.

Deaths.

	1904	1905	1906	1907	1908
Consumption	21	20	16	19	22
Typhoid fever	0	2	0	2	0
Scarlet fever	0	0	0	1	0
Measles	0	0	0	0	0
Whooping-cough	0	0	0	1	0
Diphtheria and croup	0	4	1	3	2
Grippe	0	0	0	0	0
Diarrheal diseases	3	4	5	1	1
Pneumonia	12	7	5	12	1
Broncho-pneumonia	0	8	0	0	2
Bright's disease	15	8	18	14	11
Apoplexy	2	14	11	9	7
Cancer	9	4	7	9	13
Accidents and violence	9	3	13	7	8
Seventy years and over	23	17	33	24	18
One year and under	18	17	12	9	16
Total deaths	136	135	141	147	136
Death rate	16.00	15.88	16.59	17.30	16.00
Death rate less non-residents	14.83	13.65	14.35	15.65	14.12

Deaths in Institutions.

	1904		1905		1906		1907		1908	
	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident	Resident	Non-Resident
Albany Hospital	8	8	8	7	9	9	15	4	7	9
Albany Orphan Asylum.....	1	0	1	2	0	0	0	0	0	0
County House	4	1	2	2	1	0	1	2	6	1
Homeopathic Hospital	2	0	2	0	1	0	1	0	2	1
House of Shelter	1	0	0	0	0	0	0	1	0	0
Home for the Friendless.....	0	0	0	0	0	0	1	0	1	0
Little Sisters of the Poor.....	0	0	0	0	1	0	0	1	0	0
Child's Hospital	0	0	0	0	1	0	1	1	2	0
St. Frances De Sayles Orphan Asylum	0	0	0	0	1	0	1	0	0	0
St. Margaret's House.....	3	1	6	5	0	1	0	1	1	0
St. Peter's Hospital.....	1	0	2	2	5	2	7	3	3	1
Births									110	
Premature births									3	

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation there were one hundred seventy-two inspections made of which one hundred ten were old houses and sixty-two new houses. There were seventy-six iron drains laid, forty-one connections to street sewers, forty-one tile drains, eighty-one cesspools, one hundred two wash basins, one hundred fourteen sinks, ninety-six bath tubs, eighty-eight wash trays, four butler's sinks, one trap hopper, one hundred fifty-five tank closets. There were one hundred eighty permits issued of which one hundred fifty-three were for plumbing and twenty-seven for building purposes. There were thirty-five plans submitted of which six were of old buildings and twenty-nine of new buildings. There were six houses tested, two with blue or red and four with peppermint and there were fifty water tests. Thirty-three houses were examined on complaint and forty were re-examined. Seventeen complaints were found to be valid and sixteen without cause.

BUREAU OF CONTAGIOUS DISEASES.

Cases Reported.

	1904	1905	1906	1907	1908
Typhoid fever	9	10	3	10	3
Scarlet fever	2	22	10	6	3
Diphtheria and Croup.....	9	24	20	39	11
Chickenpox	1	0	0	1	3
Measles	4	0	3	2	0
Whooping-cough	1	0	0	0	0
Consumption	1	4	0	22	28
Totals	27	60	36	80	48

Contagious Diseases in Relation to Public Schools.

	D.	Reported S. F.	D.	Deaths S. F.
Public School No. 2.....		1		
Public School No. 10.....	2		1	
Public School No. 15.....	1			
St. Joseph's Academy.....	1			
Lady of Angel's.....	1			

Number of days quarantine for diphtheria:

Longest..... 16 Shortest..... 14 Average..... 15 1/2

Number of days quarantine for scarlet fever:

Longest..... 50 Shortest..... 13 Average..... 26 4/9

Fumigations:

Houses..... 21 Rooms..... 66

Cases of diphtheria reported..... 11

Cases of diphtheria in which antitoxin was used..... 11

Cases in which antitoxin was not used..... 0

Deaths after use of antitoxin..... 2

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

	1904	1905	1906	1907	1908
Initial positive	9	17	13	28	16
Initial negative	13	32	38	38	26
Release positive	2	8	1	33	13
Release negative	5	12	19	57	32
Failed	0	0	13	19	1
Totals	39	69	84	175	88

Test of sputum for tuberculosis:

Initial positive	4	3
Initial negative	13	10

BUREAU OF MARKETS AND MILK.

Wagons and milk in clean condition.....	19
Wagons and milk in unclean condition.....	0
Butter fats below 3 per cent.....	0
Butter fats from 3 to 3.5 per cent.....	4
Butter fats from 3.5 to 4 per cent.....	15
Butter fats over 4 per cent.....	0
Solids below 12 per cent.....	3
Solids from 12 to 12.5 per cent.....	2
Solids from 12.5 to 13 per cent.....	7
Solids over 13 per cent.....	7

BUREAU OF MILK.

No.	Specific Gravity	BUTTER FATS				SOLIDS.			
		Under 3%	3 to 3.5%	3.5 to 4%	Over 4%	Under 12%	12 to 12.5%	12.5 to 13%	Over 13%
5.....	34	..	..	I	..	..	..	..	I
7.....	34.8	..	..	I	..	..	..	..	I
8.....	30.7	..	I	..	..	I	..	..	..
12.....	32.7	..	I	..	..	I	..	..	..
22.....	32	..	..	I	..	..	..	I	..
23.....	31	..	..	I	..	..	I	..	..
36.....	33	..	..	I	..	..	..	..	I
40.....	34	..	..	I	..	..	..	..	I
58.....	32	..	..	I	..	..	..	I	..
78.....	33	..	..	I	..	..	..	..	I
120.....	33	..	..	I	..	..	..	I	..
148.....	33	..	I	..	..	..	I	..	..
161.....	32	..	..	I	..	..	..	I	..
170.....	33	..	..	I	..	..	..	..	I
171.....	31	..	..	I	..	..	..	I	..
194.....	31	..	..	I	..	..	..	I	..
195.....	34	..	..	I	..	..	..	..	I
336.....	31.6	..	..	I	..	..	..	I	..
357.....	30	..	I	..	..	I	..	..	..

MISCELLANEOUS.

Mercantile certificates issued to children.....	29
Factory certificates issued to children.....	14
Children's birth records on file.....	43
Number of written complaints of nuisance.....	35
Privy vaults	4
Plumbing	11
Other miscellaneous complaints.....	20
Total number of dead animals removed.....	407
Cases assigned to health physicians.....	61
Calls made	164

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK.—STATISTICS FOR OCTOBER, 1908.—Number of new cases, 119; classified as follows: Dispensary patients receiving home care, 13; district cases reported by health physicians, 5; charity cases reported by other physicians, 58; moderate income patients, 56; old cases still under treatment, 46; total number of cases (new cases), medical, 32; surgical, 11; gynaecological, 3; obstetrical,

33 mothers and 29 infants under professional care; eye and ear, 1; skin, 5; throat and nose, 1; contagious diseases in medical list, 10; removed to hospital, 5; deaths, 2.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; medical students in attendance, 2; Guild nurses, 2; patients, 3; visits by head obstetricians, none; by attending obstetricians, none; by medical students, 14; by Guild nurses, 18; total number of visits for this department, 32.

Visits of Guild Nurses—(all departments): Number of visits with nursing treatment, 969; for professional supervisions of convalescents, 394; total number of visits, 1,363. Cases reported to the Guild by four health physicians and by thirty-two other physicians. Six graduate nurses and three pupil nurses were on duty.

Department of Dispensary Work—October, 1908.—Fifty-six visits were made to the South End Dispensary in October, averaging $2\frac{1}{4}$ hours each or 129 hours or 16 days work. The attendance for the month was 147 new and 501 old patients, divided in clinics as follows: Medical, 14 clinics, 133 patients; children's, 14 clinics, 112 patients; gynecological, 9 clinics, 47 patients; surgical, 13 clinics, 67 patients; nose and throat, 9 clinics, 43 patients; eye and ear, 9 clinics, 148 patients; skin, 9 clinics, 64 patients; dental, 4 clinics, 6 patients; stomach, 4 clinics, 9 patients; lung, 6 clinics, 11 patients; nervous, 2 clinics, 4 patients. The lung clinic opened October 19th with two day clinics and one evening clinic. An average of two new patients has been present at each clinic, which is an encouraging beginning.

CIVIL SERVICE EXAMINATIONS FOR THE STATE AND COUNTY SERVICE.—The State Civil Service Commission will hold examinations on December 12, 1908, for the following positions: Bookkeeper, fourth grade (women only), salaries not exceeding \$720, or \$600 and maintenance; Junior Draughtsman, Public Service Commission, First District, \$750 to \$1,200; Photographer, Pathological Institute, New York City, \$720 to \$900; Sloyd Instructor, State Institutions, \$500 to \$720 and maintenance; Teacher of Freehand Drawing, State Agricultural and Industrial School, \$40 to \$60 a month and maintenance.

The Commission will also hold, about December 15, 1908, examinations for Instructors in Bakery, Carpentry, Machinery, Masonry, Printing and Tailoring, at the State Agricultural and Industrial School, Industry, N. Y. Each instructor, in addition to giving instruction and carrying on the work of the institution in his trade or industry, must live in the cottage with the boys constituting his class, and with his wife must manage the house and direct the work of the boys. Candidates must, therefore, be married men, and their wives must be competent to fill the position of Cottage Matron. Instructors receive from \$720 to \$780 and maintenance, and their wives as Matrons receive \$300 and maintenance.

The last day for filing applications for these positions is December 5th. Full information and application forms for any of the examinations may be obtained by postal card request to the Chief Examiner of the Commission at Albany.

THE SAMARITAN HOSPITAL of Troy received \$50,000 by the bequest of Mrs. Ralph Townsend, who recently died in England.

THE ALBANY HOSPITAL was left \$50,000 by the late Ariel Lathrop, of Albany.

The late E. DE L. PALMER, of Albany, willed the Albany Hospital \$5,000.

ARMY MEDICAL CORPS EXAMINATIONS.—The Surgeon-General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1909 will be held on January 11, 1909, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature, and latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before December 10, 1908. Early attention is therefore enjoined upon all intending applicants. There are at present fifty-seven vacancies in the Medical Corps of the Army.

TREASURY DEPARTMENT—BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, WASHINGTON, D. C. A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B street SE., Washington, D. C., Monday, January 11, 1909, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000, and surgeons \$2,500 a year. Officers are entitled to furnish quarters for themselves and their families, or, at stations where quarters can not be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month, according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

PERSONAL.—Dr. and Mrs. ANDREW MACFARLANE have returned from Japan.

—Dr. HARRY F. HULL (A. M. C., '99) is now stationed at the Newport Naval Training Station.

—Dr. E. G. GRIFFEN (A. M. C., '01) recently purchased the house 176 Washington avenue, Albany.

Dr. C. S. ALLEN (A. M. C., '07) is now located at Atlanta, Elmore county, Idaho.

Dr. WM. O. STILLMAN (A.M.C.) was re-elected president of the American Humane Association November 19th.

Dr. E. F. HAGADORN (A. M. C., '08) is practicing at Ephratah, N. Y.

DEATHS.—Dr. HAMILTON MOORE WEEDON (A. M. C., '55) for more than forty years a practitioner of Eufaula, Alabama, died at his home in that city, September 10, aged 74.

Dr. ORREL C. CURTIS (A. M. C., '05), of South Egremont, Mass., died recently of tuberculosis at the home of a relative at Bristol, Wis., aged 27.

In Memoriam

HENRY SHELDON EDSON, M. D.

Dr. Henry Sheldon Edson died at his home, in Cortland, N. Y., on Saturday afternoon, September 19, 1908, after a four weeks' illness from pneumonia.

Dr. Edson was born in Otego, Otsego county, April 9, 1835, his father being a farmer. His grandfather, Dr. Benjamin Edson, was a native of Connecticut and served in the War of the Revolution. Dr. Edson as a boy attended the district school and in 1856 went to the Cooperstown Seminary and later received instruction in the Delaware Literary Institute. Subsequently he attended the Fort Plain Seminary, after which he taught for about fifteen years in this state, Pennsylvania and Michigan. He then decided to study medicine and entered the office of his brother, Dr. Benjamin Edson, in Brooklyn. He attended lectures at the University of Vermont and Union College and graduated from the Albany Medical College in 1877. He began practice at Mount Upton, went from there to Sidney and settled in Cortland about thirty years ago.

In 1892 he married Miss Alta N. Terry of his native town, who, with three daughters, survives him. He also leaves two brothers and one sister, Dr. Benjamin Edson of Brooklyn, M. A. Edson of Otego, and Mrs. Jennie McDaniels of Otsego county.

Dr. Edson was a member of Vesta Lodge, No. 255, I. O. O. F., and received his twenty-five year jewel in June.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Anatomy: Descriptive and Surgical. By HENRY GRAY, F. R. S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. Seventeenth edition thoroughly revised and re-edited with additions. By JOHN CHALMERS D'ACOSTA, M. D., Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College, Philadelphia, and EDWARD ANTHONY SPITZKA, M. D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Illustrated with 1149 engravings. Lea & Febiger, Philadelphia and New York, 1908.

At the early age of thirty-one years Henry Gray issued the first edition of a great masterpiece, *Anatomy, Descriptive and Surgical*. This was the only edition the great anatomist ever saw, although he was busy with the second edition at the time of his death, June 13, 1861. Gray learned his anatomy by making his own dissections, and his untiring energy and great talent, together with a keen sense of the principles of pedagogy enabled him to present the entire subject in a clear, concise and systematic manner. The drawings accompanying the work, which were made

by Doctor H. Vandyke Carter, were executed in such great number and with such skill in accuracy and vividness that they, by far, excelled any illustrations found in the excellent anatomies commonly used at the time. This was in 1858, when the firm of John W. Parker & Son brought out the first publication. The critics, with the exception of the *Medical Times*, were unanimous in their praise. The book was a great success from the start and its sale was phenomenal. While the book contained few, if any, new anatomical discoveries; the method of presenting the subject was original and the matter of arrangement achieved in a most admirable manner. It was this work that introduced the remarks on surgical anatomy, at least no English author attempted this feature before.

The Anatomy before us is the outgrowth of the genius of Henry Gray. It is the seventeenth edition and marks the semi-centennial anniversary of the initial publication of his great Anatomy. The editor, as in the previous edition, has dedicated the work to the much-beloved William W. Keen, the noted surgeon of Philadelphia. In fifty years, through a succession of revisions, the work has grown to more than its double. This growth is due to the enterprise of American publishers and to the enlistment of the valuable services of the most distinguished English and American anatomists.

A careful perusal of the edition shows that in the main it does not differ essentially from the previous edition. Some anatomical facts and illustrations have been added. Very wisely, many of the original cuts have been retained. The method (which we believe was original with Gray) of demonstrating the relations of the arteries by means of the ring, still remains and will be appreciated by students. The International (Latin) nomenclature, as recommended by the international committee and published by Wilhelm His, has been incorporated in this, as in the previous edition. This new nomenclature is introduced in parentheses and is sure to help the student. The work as a whole contains an immense fund of anatomical knowledge prepared with great didactic skill.

Most of the important changes are in the text of the central nervous system. Here Professor Spitzka has made many alterations and added many important facts, bringing the subject right up to date. He is to be particularly complimented for his very instructive drawings, of which there are many. The diagrammatic drawings are especially helpful. The whole subject is largely rewritten and enlarged so that 281 pages are now devoted to a consideration of the nerve system. Doctor Spitzka's valuable addition to the work makes it quite necessary for the teacher of anatomy to be provided with the new edition, as it is desirable for the teacher to be in close touch with the students in the small and latest details of nervous anatomy as found in this work.

Of the many anatomies in common use fifty years ago, Gray is the only one that has remained with us. The present edition is a grand monument to the memory of a great genius of whom we know so little and love so well. As in the past, so in the future, Gray in its new edition will be a guide to the student, teacher and practitioner.

H. E. LOMAX.

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